ELECTRICAL WORLD

News Issue

MARCH 6, 1950 • OUR 76th YEAR

A McGRAW-HILL PUBLICATION

Benjamin W. Creim, Southeastern Power Administrator . . . See Page 4

A New Federal Power System . . . Page 4

What's in Census for Utilities . . . Page 13

WE LINED UP THE FLUX PATH

TO CUT DOWN SIZE!

Twelve years ago, General Electric introduced the Spirakore transformer. It was revolutionary! It was the first distribution transformer in which the flux through the core followed grain direction of the steel. Literally, the crystals of cold-rolled steel were lined up to provide the best possible flux path and then, by spirally winding the core, we lined up the steel so the flux would follow this path. Magnetic properties of the steel were so improved that we were able to build a much smaller, lighter transformer—that sold at a much lower price.

Now many *small* distribution transformers are built along these lines. But General Electric has not stopped here. By adapting this same principle to larger cores, we have brought weight savings to the entire line of single-phase, outdoor distribution transformers—up through 500 kva. Nor did we stop with the core. We improved the impulse strength of the coils—improved the clamping construction for greater mechanical strength. We sealed the tanks to prolong oil life—and even developed a new, better synthetic resin paint that is baked on, and which reduces maintenance costs.

Today—as twelve years ago when lighter, smaller Spirakore transformers made history—Spirakore still leads the field—the finest distribution transformer we have ever made, the finest you can buy. Ask for bulletins GEA-4885 and GEA-4521. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

The Electrical Week

There's a new federal power empire arising. It is the Southeastern Power Administration which already is selling the output of two plants. There are more plants under construction and many, many more in the blueprint stage (p 4) . . . Terms of the contract which SPA has been negotiating with two Oklahoma companies have been disclosed. The discloser was Clyde T. Ellis, executive manager of the National Rural Electric Cooperative Association. The disclosure came at a hearing of the House appropriations subcommittee where Ellis vigorously opposed the contract and urged construction of federal transmission lines (p 6) . . . A syndicate will be formed on the Pacific Coast to offer Pacific Power & Light Co common to private investors. If successful the result will be continued private ownership of the important Northwest utility (p 11) . . . Before atomic power can compete with coal for the favor of utility men a practicable breeder must be developed. And before that time many problems must be solved, a General Electric executive told a joint meeting of two Pennsylvania Electric Association committees (p 12) . . . At Westinghouse the IBEW will go counter to present labor aims. It will seek pay raises instead of pensions (p 13) . . . But those working for electric utilities need not look for any big wage increases. It's not in the cards says McGraw-Hill's Economics Department (p 30).

Federal Power Commissioner Claude L. Draper is reported to be making a satisfactory recovery from a broken hip, suffered Feb 22 when he slipped on the icy steps in front of his home.

Compulsory retirement at a predetermined age from the pressure of most industrial jobs is recommended by A. D. Marshall, assistant secretary of General Electric Co, as a means of promoting the emotional well-being of retiring workers and making room in industry for young people seeking jobs.

Senate Interior Committee has come out in favor of a $2.5-billion Columbia River coordinated development program with a basin account. But details of what the committee approved are still being debated.

It's small comfort to the admirals who are still mourning the grounding of the *Missouri*, but the Navy isn't the only government agency with that sort of trouble. The "mighty Mo" of Admiral Mike Strauss' Bureau of Reclamation fleet is a dredge named, *The Colorado*. It cost $871,700 and went into operation last year in the lower Colorado River. Sometime around midnight last Nov 4, it sank in 19 ft of water. It's now being raised at an estimated cost of $200,000.

SEC has "definitely in sight" $603 million of public utility financing by long-term securities in 1950. That's what Morton E. Yohalem, director of the public utilities division, told the House Appropriations Committee in Washington. He said "the banner year for utility financing" was 1949, when the Commission approved issue of $630 million in securities by holding companies and their subsidiaries.

From the conservative side of the rain-making argument has come the suggestion that man may some day be able to guide rain clouds around the sky "like ships on the ocean." It's not out of the realm of possibility, U. S. Weather Bureau Director F. W. Reichelderfer told a House committee. However, he indicated that now he's more interested in a basic-data study of the nation's water resources.

General Electric Co has decided to do something about the some 10 million lamp sockets in "pan"-type or suspended "pan"-type fixtures. The something is a new mushroom-shaped, 50-w incandescent lamp which not only provides direct and indirect lighting but also looks attractive in daytime.

The Tennessee Valley Authority is missing an opportunity to collect some additional revenue. It should have charged an admission fee to the 6,101,000 persons who visited its dams and power plants in 1949.

Department of Agriculture's Forest Service says that water runoff from national forests in the West is much more important than you might think. National forests occupy one-fifth of the land area of 11 western states but supply more than one-half of the total stream flow in these 11 states.

Japanese utility men are trying to find a solution to their metering problem. Of 13 million customers 9 million are buying electricity on a flat-rate basis. And installation of that many meters would cost more money than the utilities have available.

The Utility Industry Looks at Sepa

New Federal Power Agency Will Have Wide Marketing Area in the Southeast; First 2 of Many Projects in Operation; Benjamin Creim Is Administrator

(See Front Cover)

THOUGH STILL IN THE process of organization, the Southeastern Power Administration already is attracting considerable attention—and concern—in the electric utility industry.

A look at the accompanying map explains why. The new federal power agency has an operating area of record proportions. Only the Bureau of Reclamation, a sister Interior Department agency, covers more territory. But Reclamation constructs and operates irrigation and power developments in 17 Western states. Sepa simply will market electric power developed by the Army Engineers in the 11 states now conceived as its bailiwick.

It's the same kind of job for which two older Interior agencies were organized. Bonneville Power Administration was created by Congress in 1937 to market energy from hydro plants built by the Engineers and Reclamation in the Pacific Northwest. Just across the Mississippi from Sepa the Southwestern Power Administration has been wholesaling power since 1943.

Against this background, several questions suggest themselves. Will Sepa engage in the same kind of feuding with investor-owned power companies that have embroiled both Bonneville and SPA? Will the new agency attempt to build the elaborate federal transmission systems that Bonneville erected and SPA sought to build? Will Sepa become a rallying force for the public power movements in the area? In short, will the power companies of the region be able to live with the new agency?

Definitive answers to such questions, of course, are not yet possible. But there are clues in the plans announced for Sepa by Interior, in the personalities of the men who will run the new organization, and in existing conditions in the Southeast's power industry.

Sepa's power will come from a number of widely scattered hydroelectric plants being built by the Army Engineers. Initial power installations at two —Dale Hollow on Tennessee's Obey River and Allatoona on the Etowah in Georgia—have been completed. Present combined capacity of 72,000 kw will be increased to 162,000 kw when additional scheduled generating units are added at these plants.

MAP showing projects where Southeastern Power Administration will get over 3 million kw of power is a bit ahead. Buford Dam is not under construction but will be this year

Within three years, Interior anticipates, more than 1 million kw of new capacity will be in operation. And even more capacity is in sight. Plans are well advanced on 14 additional hydro projects, which almost certainly will be built eventually. These will make Sepa the marketing agent for more than 3 million kw of capacity. And the Engineers are working up still more plans. This is the basis of an Interior estimate that Sepa will be marketing as much as a tenth of all the power produced in the Southeast in a few years.

By 1954 Sepa will be wholesaling energy from six other plants where the Engineers will have completed full, or initial, power installations. The plants and their locations are Wolf Creek, Kentucky, and Center Hill, Tennessee, both in the Cumberland River Basin; Clark Hill on the Savannah River, Georgia; Buggs Island, Roanoke River, Virginia; Jim Woodruff, Apalachicola River, Florida, and Philpott, Smith River, Virginia. By 1955, the Engineers plan to start power operations at another hydro project, Buford on the Chattahoochee River, Georgia, on which work is scheduled to start this year.

Chief salesman of all this federal power will be Benjamin W. Creim, who recently was appointed Sepa's first administrator. Creim has long been iden-

tified with federal power programs, first as an engineer for Bonneville, then—after World War II service as a Navy officer—as regional power manager for Reclamation's Sacramento office. In the latter job, he got the feel of one of his new tasks by negotiating contracts for the sale of Central Valley Project power.

On the Pacific Coast, Creim earned a reputation as a better-than-average engineer and a tough, but fair, negotiator. He also proved himself a staunch advocate of public power but not a wild-eyed propagandist on the subject.

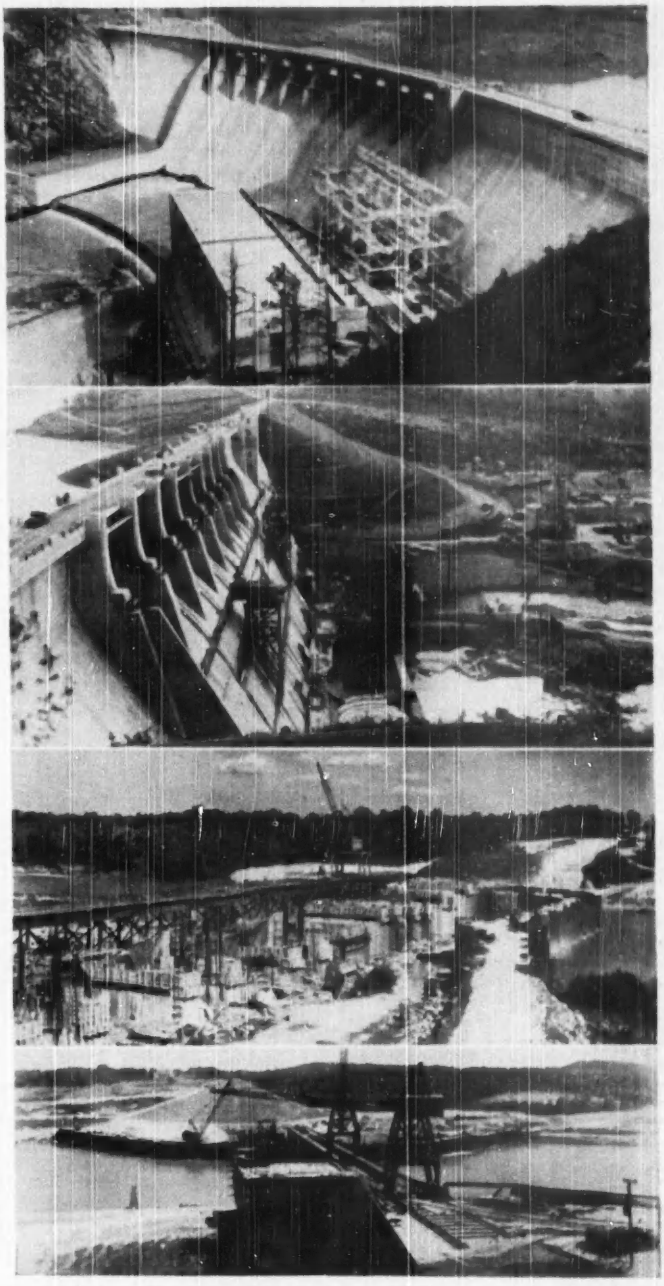
His boss is Walton Seymour, the Department's top power official and the founder of Sepa. Any contract negotiated by Sepa will have to win Seymour's approval or face probable repudiation by Interior.

Right now, however, Creim is concerned with organizational problems. He already has funds for a staff of 11 persons and will hire 23 more later this year if Congress approves Sepa's budget. The agency temporarily is operating in Washington. Selection of a headquarters city in the Southeast has been postponed because of rival invitations from several Chambers of Commerce.

Sepa transmission lines already have been hinted at by Interior officials. At a minimum, the agency probably will want to interconnect relatively nearby plants. If the Engineers complete basin-wide developments such as those proposed on the Roanoke and Savannah rivers, Sepa certainly will try to link the several hydro plants in each basin.

But there is little likelihood of a Sepa bid in the near future for a transmission grid of the proportions of either the Bonneville or SPA systems. The highly industrialized Southeast already has extensive transmission facilities of large capacity. There are no large, power hungry areas out of reach of existing lines.

"Preference customers"—other federal agencies, state and municipal systems, and rural cooperatives—will get priority consideration from Sepa. Creim



POWER FOR SEPA will come from several projects now under construction such as these: From top to bottom are Allatoona, where the first 36,000-kw unit is operating; Center Hill, scheduled for completion this year; Buggs Island, which is to be ready in 1952; and Clark Hill, where 280,000 kw will be installed by 1954

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has neither the legal right nor the inclination to ignore would-be power purchasers in these categories in favor of power companies. The Flood Control Act of 1944 which made Interior the marketing agency for power produced by the Engineers also directed the Department to give preference to public agencies and co-ops.

That's why Interior, even before the establishment of Sepa, committed the agency to sell all the output at Dale Hollow, Wolf Creek, and Center Hill to TVA. And TVA probably will absorb the generation from other plants to be built in its area.

But Sepa also inherited an Interior-negotiated contract with Georgia Power Co. which purchased the entire output of the Allatoona plant. Rights of "preference customers" are provided for in this contract by a company guarantee to let Interior draw up to 2,500,000 kw-hr per week for such customers.

Regardless of the merits or drawbacks of such an arrangement, the Allatoona contract indicates that power companies will be able to come to some sort of terms with Sepa. And it is doubtful that they will find Seymour and Creim any harder to deal with than TVA, a neighbor for the past decade and a half.

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Wisconsin Electric Co-op Adds Out-State Directors

The Wisconsin Electric Cooperative has enlarged its board of directors to include a representative of the associate member co-ops in each of these eight states: North and South Dakota, Iowa, Minnesota, Illinois, Missouri, Kansas, and Nebraska. Considerable expansion of the operations of WEC line materials and engineering departments during recent months led to the move.

A new warehouse being opened at Moorhead, Minn., will enable WEC to serve the western area with increased economies.

In a report on WEC's business operations during the past year, W. V. Thomas, general manager, at the recent annual meeting, stated that gross volume reached a new high of $5.8 million. The co-op operates line materials, engineering, public relations, and appliance departments, and publishes the *Wisconsin REA News* for 65,000 co-op members in the state.

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Franchise Granted

Rosebud, Texas, has granted Southwestern Electric Service Co a 25-year franchise, replacing one expiring.

Co-op Spokesman Blasts Southwest Contract Proposal, Reveals Terms

TERMS OF THE contract which Oklahoma electric utility companies and Southwestern Power Administrator Douglas G. Wright have negotiated for distribution of federal hydroelectric power in the Southwest were disclosed last week in Washington. The contract, which both Wright and the companies have approved, has been awaiting the approval—or rejection—of Interior Secretary Oscar L. Chapman for more than two months.

Disclosure of the contract terms was made to a House appropriations subcommittee by Clyde T. Ellis, executive manager of the National Rural Electric Cooperative Association. The testimony by Ellis came as a surprise to both parties to the contract—SPA and the Oklahoma companies—who had agreed not to discuss its terms until Interior act l.

Ellis Urges Federal Lines

Ellis opposed the contract, urging construction of federal transmission lines to carry SPA-marketed power to preference customers in the area. Then he revealed the following provisions of the contract:

Public Service Co of Oklahoma and Oklahoma Gas & Electric Co agreed to purchase federal power from SPA and deliver power to federal customers on their lines. SPA would buy, at approximately the same rates, company power delivered to its customers. Federal customers would be billed only by SPA.

Extra Power to Cover Losses

SPA also would sell the companies 40% more power than the amount delivered to federal customers over company facilities. This extra power, purchased by the companies at the same rate as that delivered to SPA customers, would cover line losses and transmission costs.

Under the two-part schedule of the contract, the companies would pay SPA either on an energy rate of 1.25 mills per kwhr or at a demand rate of $1.15 per kilowatt-month. If SPA had excess power, the companies would buy it, at an energy rate of 1.25 mills per kwh—or a demand rate of 4.5c per kilowatt-day.

The companies would sell SPA up to 50,000 kwr of off-peak steam power for firming up the federal hydro outpu. and additional steam power when available. SPA would pay 3.25 mills per kwhr.

Customers in the Southwest were divided by the contract into three classes: Group A, including those served by the companies within the preceding two years, except cooperatives; Group B—mainly REA-financed co-ops and federal agencies—"preferred customers" who could not be served from lines operated by the government with the addition only of transformers; and Group C, customers not in the other groups, largely new customers. SPA could claim customers in all three groups, but the companies would receive its own wholesale rate for any Group A customers which SPA served.

Company power delivery would be made to points specified by SPA, except when new facilities were required at an excessive cost in the opinion of the companies. The companies also would decide whether or not to comply with government requests to serve non-Group B customers.

The proposed contract would continue for 20 years, with rates reviewed every three years. Earlier termination would be permitted upon three years' notice after disagreement over rates, if the contract were not approved by FPC within one year, by either party on three years' notice after the first five years, by the government on three years' notice should a company fail to serve because of rulings by a state regulatory body, and for intentional violation of a material provision of the contract.

Other provisions of the agreement:

SPA would deliver 200 kwhr per month for each kw sold the corapany, with the estimated load factor about 27%.

Federal hydro units would be operated as condensers at company request.

Low water would not be considered uncontrollable, and a water shortage would not excuse SPA from fulfilling its power obligations.

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Argument Set for April 5

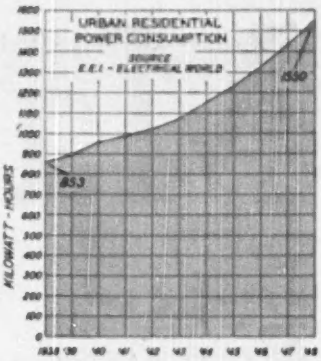
Oral argument over the decision of a Federal Power Commission examiner who turned down an application by the State of New York to develop St. Lawrence River power will be heard by the commission April 5 in Washington. The Power Authority of the State of New York requested oral argument when it filed exceptions to the Dec 20 decision of presiding examiner Glen R. Law.

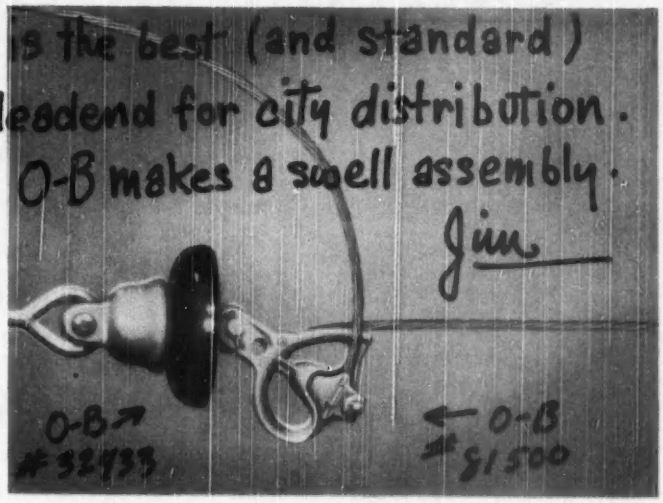
average power man -- it didn't happen! Instead of that, demand kept rising to new highs, forcing the installation of new power production facilities. All over this country new power plants have risen, their stacks and, in many more cases, present ones have undergone major expansion programs. Millions of added kilowatt capacity have gone the line since the war and, today, manufacturing facilities of power companies are at least equal to demand, even if not yet on a comfortable reserve basis. Yet this ample generating capacity, no matter how adequate it may be, means little or nothing in many communities when it comes to the problem of satisfying the growing appetite of the public for electrical living. The power is there, but the facilities to bring this power to the outlet in Mrs. Brown's kitchen were never designed to handle today's demands.

It is no criticism of the men who laid out city distribution systems 25 years ago to say they underrated the popularity of electricity in the home. It would have taken another Jules Verne to have seen the expansion in equipment for residential use that has occurred since many of our presently operating distribution lines were designed and built. Be that as it may, however, we are faced with some hard facts.

Going back only a few years, to 1938, the average annual residential consumption in the United States was 853 kwhr, according to published EEI figures. By 1948, this had risen to 1,550 kwhr. Estimates for 1949 indicate another 10-per cent increase in a single year, bringing the likely total to about 1,770 kwhr, or in other words, a 100-per cent increase in only 11 years. There is no reason to suppose, however, that this rate of growth will not continue. In certain sections of plentiful power, today, the yearly residential consumption is already 5,000 kwhr, with the end not yet in sight. This would have been hard to foresee [illegible], but we have it with us and we must deal with it! The only way to do so is by increasing distribution capacity.

This capacity can be stepped up by complete reconstruction of the distribution system—a costly and time-consuming process, although obviously the best. Almost as good and much more practical is the relatively simple operation of reconnection of present 2,300-volt transformers to approximately 4,000 volts, which has the effect of delivering close to three times former power. This practice will meet present conditions which have reached emergency proportions in many communities and will at least extend a major project somewhat further into the future, at the same time utilizing existing lines, transformers, and most of the insulation.





Many power companies have decided to prepare for a voltage increase where it now [illegible] by reducing the spacing at those insulation points which must be changed, namely, the dead-end. This may be done as a rainy day job or may be set against some reasonable schedule pointed toward a future date when the system will be in readiness for higher voltage. Such a program will [illegible] the pressure of a last minute [illegible] of temporarily killed lines. Such planning has in it many elements of economy.

Certainly, all new deadends should be of high-voltage standards in view of the almost inevitable change. By doing this, nearly half the cost of changing over the job twice is saved, among other things, with avoidance of accumulating a large surplus stock of [illegible] but largely duplicate low-voltage materials.

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San Francisco

gets extreme flexibility

to handle load changes and future load growth

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everything was shipped complete—as a unit—and easily installed

safety to personnel

no exposed circuits; metal encloses all current-carrying parts

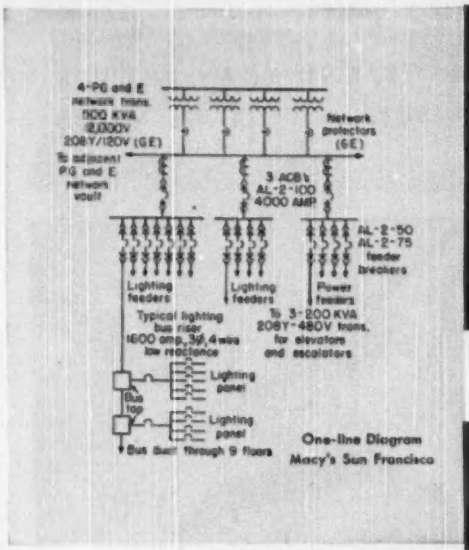
plenty of "IC"....with

100,000 amperes interrupting capacity, adequate to handle all short circuits

GENERAL ELECTRIC

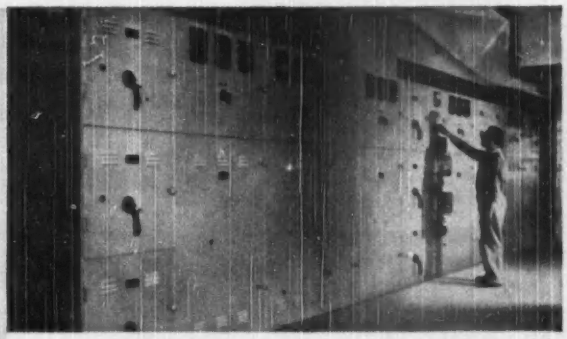
HERE'S WHY . . . *"In the department store business we cannot take any chances with power outages or potential fire hazards. We must also plan for expansion. That's why we wanted our power distribution system to be safe, to have adequate feeder and branch-circuit capacity, plus flexibility. General Electric switchgear gave us all these requirements."*

E. L. MOLLOY, VICE PRESIDENT
MACY'S, SAN FRANCISCO



This, the largest switchgear installation to date in any San Francisco commercial building, adequately handles the power requirements that average four watts per square foot (nearly 500,000 square feet). Flexibility of the feeder system permits load changes without increasing the load on the switchgear. The 4000-ampere breakers have induction relay tripping.

Macy's installation is a complete General Electric project—switchgear, three 200-kva transformers for elevators and escalators, power and lighting panels, motors, and control for ventilating and boiler-room auxiliaries. One source of responsibility plus the very best in co-ordinated planning, engineering, manufacturing, and service facilities to give maximum savings and efficiency to the customer.



G-E metal-enclosed switchgear handles the incoming 120/208-volt power. The equipment is divided into three sections, two for lighting, one for power. Breakers (cascaded) are of the drawout type for ease of inspection and maintenance.

Four G-E network units, rated 500 kva, 12,000-120/208 volts in a Pacific Gas and Electric Company vault serve the building. Macy's 2500-kva load represents one of the largest loads added to PG&E's downtown network in recent years.

low-voltage SWITCHGEAR

Modern industrial power distribution systems using G-E switchgear are applicable to any industrial plant or commercial building where you want proper voltage for top performance of equipment, an extremely flexible setup to take care of expanding or changing loads, adequate short circuit protection, safety to personnel, and low installation and maintenance costs.

Be sure to see the "More Power to America" full-color sound slidefilm "Modern Industrial Power Distribution." Ask your G-E sales representative to arrange a showing for your organization.

Investigate today the many advantages of using General Electric switchgear in *your* plant for efficient, flexible power distribution. Contact your G-E sales representative for further information—and write for the helpful bulletins listed below. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

GEA-4966 Low-voltage Switchgear
GEA-3642 Air Circuit Breakers
GEA-2017 Network Protectors
GEA-3083 Metal-clad Switchgear
GEA-3592 Load-center Substations
GEA-3758 Load-center Distribution

GENERAL ELECTRIC

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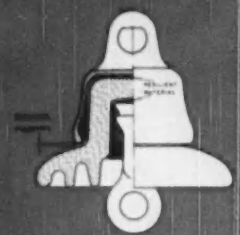
INSULATORS

HIGH STRENGTH
a "built-in"
Pinco feature!



The Pinco No. L 1510 does NOT attain its extraordinary strength through increased metal or porcelain bulk. Instead, Pinco design reduces cap weight and insures the most favorable volumetric relationship between porcelain and metal parts.

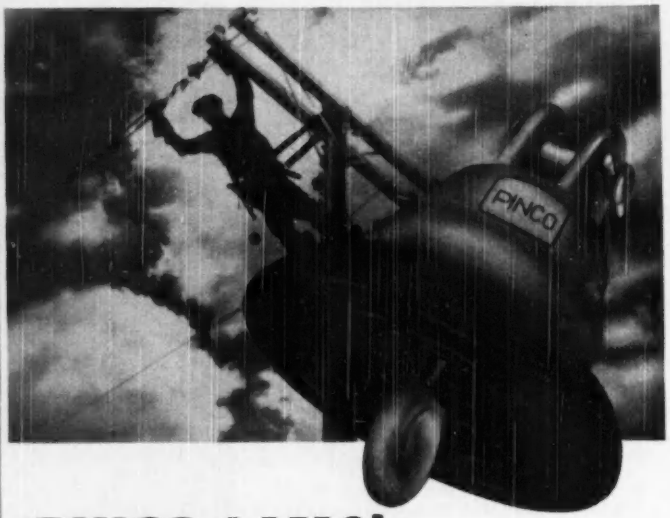
PINCO PORCELAIN . . . wet plastic process, non-porous, homogeneous, tops in electrical, mechanical strength.

PINCO ASSEMBLY METHODS... provide the utmost in thermal protection where metal joins porcelain.

PINCO L1510
SPECIFICATIONS

Dry Flashover ..... 60,000 volts
Wet Flashover ..... 35,000 volts
Leakage Distance ..... 7"
M & E Strength ..... 10,000 lbs. min.

TO MEET TODAY'S AND TOMORROW'S
HIGHER DISTRIBUTION VOLTAGE NEEDS



PINCO L1510's...
RIGHT for the Job...RIGHT on the Job!

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See page 64, Pinco Catalog No. 49 for complete electrical and mechanical characteristics.

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• 1920 Thirty Years Service to the Electrical Industry 1950 •

HELICOPTER is used by Pacific Gas & Electric Co to make snow survey on Kings River watershed. Helicopter carried technician and gaging equipment up to elevations of 9,000 ft and cut down the time required to do the work from 2½ days to 35 minutes

Local Private Ownership of Pacific Power & Light Co Appears Certain

A SYNDICATE OF Pacific Coast underwriters probably will be formed to offer common stock of the Pacific Power & Light Co to Western investors.

Confidence in the practicability of such a plan was expressed last week by representatives of A. C. Allyn & Co and Bear, Stearns & Co, New York firms heading the investment group which recently purchased PP&L's common from American Power & Light Co for $16,125,000 (EW, Feb 13, p 64). At the same time, a spokesman for the new owners asserted they had had no discussions with public ownership groups seeking to acquire portions of the PP&L system. No such discussions are anticipated, the same source reported.

Residents of the Northwest already had been advised of preliminary conversations between the owners of PP&L and Coast investment bankers. These "informal discussions" took place during a recent inspection of the Oregon-Washington utility's properties by J. Douglas Casey, president of the Allyn firm, and Donald C. Lillis, a Bear, Stearns partner. Casey and Lillis, who were accompanied on the tour by staff engineers, announced the discussions to counteract rumors that PP&L's system would be sold piece-meal to public utilities districts and rural electric cooperatives.

No concrete steps toward resale of the utility's stock are likely to be taken before Aug 7, however, since the new owners must hold the securities for six months in order to secure capital gains tax credits. The purchase from American became effective Feb. 7. The terms of purchase, as required by the Securities and Exchange Commission, commit the new owners to disposal of the securities within two years.

Casey and Lillis also anounced in the Northwest that they planned to continue operation of the PP&L system "exactly the way it is." They denied there were any plans for sale of the system, or part of it, to the Portland General Electric Co. Resales to both PGE and public bodies in the area had been contemplated by one of the groups which sought to purchase PP&L from American.

Revival of reports that PP&L might be acquired by public ownership groups came shortly after Casey and Lillis arrived in the Northwest. At least one meeting of such groups, at Pendleton, Ore., was staged with the announced objective of starting negotiations for such an acquisition.

In New York, Lillis revealed that the new PP&L owners had received a telegram from one of these groups, expressing interest in purchasing part of the system.

"We have had no other contact with the group, however," he added. "And I don't expect to discuss the matter with them. Certainly, we are not seeking such an offer."

Lillis praised PP&L's present operating management as "probably as good as there is in the business." He said the system was in "fine shape," with excellent relations with its customers and the public of the region.

•

Niagara River Treaty to Up Hydro Potential

Diplomats in Washington last week opened the way for redevelopment of the power of Niagara Falls.

A new Niagara River Water Treaty—revising a 41-year-old treaty—was signed Feb 27 by Secretary of State Dean Acheson and Canadian Ambassador Hume Wrong. When both nations ratify the new treaty, considerably more water will be available for power production. It is estimated that from 100,000 cfs to 150,000 cfs of the Niagara River's flow will become available for power.

Power possibilities, which set off the negotiations for the new treaty, were described last fall in a Federal Power Commission report. It proposed a $300 million-plus redevelopment promising more than three times increased power.

Terms of the new treaty reallocate water between the two nations, calling for a 50-50 sharing of the water available for power use. The earlier treaty had given Canada a larger share.

Despite the important role of power in the new treaty, it carefully provides for an adequate flow over the falls to preserve the scenic spectacle. In addition, the treaty provides for the construction of remedial works to insure an unbroken crestline at the falls.

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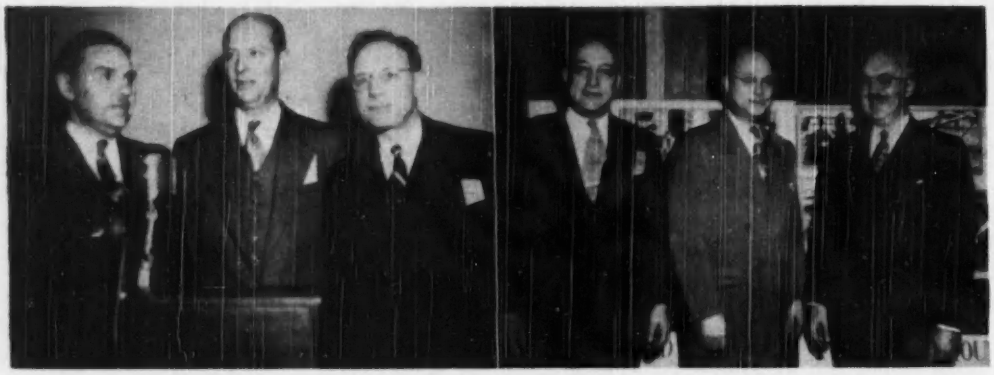
Curtis McGraw Heads Company Publishing EW

Curtis W. McGraw was elected president and chairman of the board of the McGraw-Hill Publishing Co, publishers of ELECTRICAL WORLD, on Feb. 24.

He succeeded James H. McGraw, Jr, head of the company for the past 20 years, whose resignation became effective on the same date. Both the former president and his successor are sons of the late James H. McGraw, founder of the publishing firm.

Two officers of the company were assigned new posts. Col Willard Chevalier was appointed executive vice-president, and Joseph A. Gerardi was elected treasurer, succeeding C. W. McGraw.



SIX REPRESENTATIVES at EEI's T&D meeting were, left to right, J. A. Pulsford, Public Service Electric & Gas Co, Newark; J. E. McCormack, Consolidated Edison Co of New York and committee chairman; and R. E. Morse, American Gas & Electric Co. In the right panel are J. W. Anderson, Philadelphia Electric Co; Howard Stites, Central Illinois Public Service Co; and M. W. Glen, Duquesne Light Co, Pittsburgh

Television Power Needs Studied by EEI Group

Power requirements, kilowatt-hour consumption, and problems involved in the rapidly growing television load came in for attention of the Transmission and Distribution Committee of Edison Electric Institute, Feb. 20-21, at Detroit.

W. L. Lawrence, Radio Corp of America, discussing television receivers as they affect power companies, told the 200 engineers that there are 4.5 million sets in use now, but the yearend total will be over 8 million.

Load per receiver varies from 150 w for the receiver with the 7-in. screen to 340 w for those with 16-in. screens. Average load is 250 to 280 w. Daily average use is from three to five hours, resulting in the daily use of 0.795 to 1.325 kwhr per set. Power factor is approximately 95%, varying slightly with different types of sets. Hours of use are influenced by the limited time of the user.

Television receivers, like most other appliances, are designed for a utilization voltage of 117 with permissible limits of 105 to 125. High voltage can cause failure of capacitors, failure of resistors, and an increase in size of the picture, making it too large for the screen. Voltage range could be increased by inclusion of a regulating transformer in the set. These are not being used because of cost.

•

Named to Illinois CC

Dale E. Sutton has been appointed to the Illinois Commerce Commission for a term ending in January 1953. He succeeds E. A. Rosenstone, resigned.

Practicable Breeder Pile Needed Before Atomic Power Rivals Coal

BEFORE ATOMIC POWER can compete with modern coal-fired plants engineers and scientists must develop a practicable breeder pile. Such a pile appears theoretically possible, but its design hinges upon the discovery of a successful scheme for extracting and handling both the waste and the useful products of fission.

Speaking before a joint meeting of the Prime Movers and Electrical Equipment Committees of the Pennsylvania Electric Association in Newark, Feb. 24, R. G. Lorraine, General Electric Co, said atomic scientists and engineers are concentrating on extending the temperature range in breeded piles to increase the thermal efficiency of heat transfer. Unfortunately, high heat transfer rates produce high thermal stresses and complicate the task of confining recirculated and possible radio active coolants in a system incorporating seals and joints that might leak.

All these problems contribute their share to the high first cost of atomic power plants, increase the personnel required, and complicate maintenance. Thus even if atomic fuel were free, the cost of atomic power may not be substantially lower than fuel generated power, Lorraine observed.

Galvanic potentials generated between pipes and massive buried copper ground plates, lie at the heart of corrosion problems frequently encountered in the vicinity of steam stations, M. C. Miller, Ebasco Services Inc, told the group. If copper grounds could be coated with lead-tin alloys, galvanic potentials would be substantially reduced, he said. Another solution to the problem is the extensive use of cathodic protection.

Mechanical meters in today's generating plants are too big and too numerous for the size of station control rooms, N. J. McCleary, Pennsylvania Electric Co, stated. He urged that only those gages needed for minute-to-minute operation be put in such control rooms.

Unlike mechanical instruments, however, electrical instruments can be too small and delicate to stand high frequency vibration from 3,600-rpm machines, H. A. Printz, Pennsylvania Power Co, asserted. He suggested that electrical instrument sizes should be increased, mechanical instrument size made smaller to meet current criticism. Printz felt that the variety of lamps and sockets used within instruments today calls for standardization among manufacturers.

On the other hand, W. B. Morton, Pennsylvania Power & Light Co, observed that internal lamps are not necessary at all if control board lighting is adequate. Their use introduces problems not associated with dial illumination.

Several Pennsylvania companies reported that they are adopting the Navy technique of enclosing spare motors and other power plant equipment in plastic cocoons containing silica gel, to protect windings against moisture while idle. R. B. Park said Scranton Electric Co uses moisture-tight boxes for this purpose.

More Pay, Not Pensions, IBEW Westinghouse Aim

Straight across-the-board wage increases rather than pensions—are being sought by the International Brotherhood of Electrical Workers (AFL) in forthcoming contract negotiations with Westinghouse Electric Corp.

The IBEW demands were seen as the initial strategic maneuver by the AFL union in an anticipated drive to attract additional members in the electrical manufacturing industry.

No figure has been mentioned by this union in the 60-day notice given Westinghouse for a new contract, covering IBEW members in 23 manufacturing, repair, and service shops. The present contract expires May 1.

IBEW contended its members are "entitled to an equitable and adequate share of the prosperity of the corporation" and also to protection against lay-offs and part-time work. So the union is also asking a "stabilizing program" which will guarantee 2,000 hours work a year.

IBEW represents employees in repair and service shops and in plants making standard controls, fractional motors, and heating devices. The union estimates that it represents about 25,000 Westinghouse employees.

This strategy by IBEW will conflict with that of rival unions representing some 60,000 workers in more than 80 Westinghouse bargaining units—the United Electrical, Radio & Machine Workers (ex-CIO), and the International Union of Electrical, Radio & Machine Workers (CIO). The UE contract expires April 1, IUE-CIO is challenging UE's bargaining rights. Both unions have stressed pension demands. IBEW now has a pension plan for its members.

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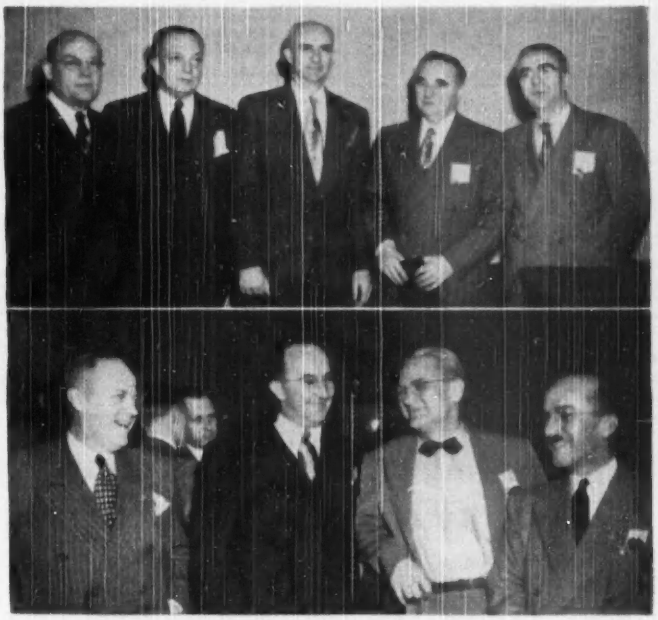
AFL Offers Its Unions Bait for 1950 Demands

American Federation of Labor economists have sent out advice to AFL negotiators on the "strength and wage paying ability" of 41 industries.

Of electric power the AFL says: "Rate increases, expanding consumption, and wider profit margins resulting from the progressive installation of new generating equipment should permit industry earnings to advance at least 10% over 1949."

On electric products: "Profits from radio and television are expected to increase by 10%, as will those from heavy appliances. Lesser gains are seen for small appliances. Earnings from heavy generating equipment probably will not show much change."



ON PROGRAM at Adequate Wiring convention were, top, left to right, Lyle Foster, Peoria, Ill., contractor; A. H. Kessler, North Central Electrical Industries, Minneapolis; J. D. Howard, Wisconsin Power & Light Co; N. J. MacDonald, Thomas & Betts Co and chairman, National Adequate Wiring Bureau; and K. E. Greene, Mt. Vernon, Ill., distributor. Informal group at bottom consists of M. R. Norton, left, Wisconsin Power & Light; H. E. Carney, Toledo Edison Co; J. R. Poteat, General Electric Co; and R. W. Wilson, Kentucky Utilities Co

Adequate Wiring Meeting Brings Out Utilities' Work

More than 600 homes were certified in 1949 and the general level of wiring quality has been raised in the St. Louis area as a result of the industry's Adequate Wiring program which has been gaining momentum since started in 1947. This is the story that the 170 industry representatives who attended the annual convention of the National Adequate Wiring Bureau, Feb 16-17, at St. Louis were told.

Successful programs were also reported by Wisconsin Power & Light Co and Louisiana Power & Light Co.

In St. Louis the Adequate Wiring program is a continuous, industry-wide activity with Union Electric Co providing intensive advertising support and the support of sales forces in the field, the local Adequate Wiring Bureau providing a plan service with a field representative to help builders of multi-unit projects and individual homebuilders. Local contractors provide an effective follow through.

Sales of No. 12 Romex now exceed sales of No. 14 in the territory of Wisconsin Power & Light Co, Don Howard reported.

Handout material, training material, models, wiring boards, and colorful diagrams have all been used by Louisiana Power & Light Co in the promotion of better wiring, according to J. M. Mooney, wiring consultant. The most effective step has been the intensive training of men in the field and the supplying of these men with tools to do the job.

An important phase of the LP&L program has been a set of check lists for each room in the house. The field representative goes over with the customer the list of equipment that may be used in each room, checking each item as to whether it is to be used immediately or is planned for the future. This helps the customer realize what wiring is required, and help in planning is provided.

A forum on "Who's to Blame for Contractor Inertia?" brought the answer, "every branch of the industry." The solution appears to be better selling practices by all branches with the emphasis on customer satisfaction through better service and convenience instead of on customer satisfaction with the lowest price. Cutting of prices to get jobs was reported to be a common practice.

FINANCIAL

Yields—Operating Electric Utility Securities

Date or Period	Bonds			Preferred Stocks			Common Stock		
	1st Quality	2nd Quality	3rd Quality	1st Quality	2nd Quality	3rd Quality	1st Quality	2nd Quality	3rd Quality
1950									
Feb. 23	2.57	2.59	2.70	3.80	4.00	4.42	5.25	5.80	6.57
Feb. 16	2.56	2.59	2.70	3.81	4.01	4.43	5.24	5.89	6.54
1949									
Feb. 21	2.72	2.80	2.95	4.02	4.28	4.69	5.78	6.93	8.47
Feb. 14	2.72	2.81	2.95	4.02	4.30	4.68	5.87	7.04	8.61
AVERAGES FOR LAST FOUR QUARTERS									
4th 1949	2.59	2.61	2.72	3.85	4.06	4.46	5.37	6.15	7.01
3rd 1949	2.61	2.65	2.77	3.88	4.15	4.54	5.55	6.47	7.51
2nd 1949	2.69	2.75	2.88	3.98	4.26	4.66	5.94	6.96	8.14
1st 1949	2.70	2.78	2.92	4.00	4.27	4.67	5.78	6.69	8.08

Data: Reis & Chandler, Inc.

CURRENT YIELDS on securities of operating electric utilities are shown above, with comparative figures for the corresponding weeks a year ago and averages for the last four quarters. These indexes, a new service of ELECTRICAL WORLD, will appear weekly

Utility Planning Guide—1950 Census—Will Be Available Late This Year

A FUNDAMENTAL GUIDEPOST for judging future power needs will be available to the utility industry later this year. That's the 1950 census—the complete national count of people, houses, and farms.

During April census enumerators will visit every dwelling and farm. And by the end of the year the Bureau of the Census will begin publishing information on the growth and migration of the United States population, the prosperity of the farmers, and the expansion of home building.

Broken down by states, cities, counties, and smaller areas, the final figures will show how many people live where, how much income they have, how many families they constitute and of what size, what their ages are. This will help power executives plan their facilities on the basis of exact and comparable data.

For instance, from the housing census they'll find out how many homes are supplied with electric power and gas—and what the occupants pay for power, gas, and other fuels. The census will count how many homes have what kind of heating equipment, heating fuel, and cooking fuel, how many have refrigeration equipment, electric lighting, radio, and television sets. From the farm census will come the number of farms with electric power, telephones, running water, and other improvements.

Of course, the census figures in most cases will be no surprise. Sample surveys run since the end of the war give a fair idea what they will show. Studies in 1947 indicated that residential users of electricity paid about $1,366 million for their services, compared to $895 million in 1940. Rural users consumed $123 million worth of power in 1947, only $49 million in 1940. In 1940 about 29 million out of 37 million American homes had electric lighting; in 1947 it was about 37 million out of 41 million.

The 1950 census is expected to show the greatest increase in population in any decade and the greatest migratory movement of people within the country. Probably the enumerators will come up with some of the following figures:

Total population will be about 152 million, 22 million more than in 1940. Some cities will be newly important. A sample Census Bureau survey indicates Norfolk-Newport News will have 40% more people than in 1940; San Francisco-Oakland, 39%; Los Angeles, 35%; Seattle and Washington, D. C., 33%; and San Antonio and Portland, Ore., 31%.

The number of families will have increased by 6.3 million since 1940, to a total of 38.5 million. But the trend toward smaller families will continue, 3.5 persons on the average in 1950 compared to 3.8 in 1940.

This increased population will have more money to spend. Ten years ago average per capita income was about $530; in 1950 the figure will be close to $1300. Even taking the dollar's reduced purchasing power into account, this represents a 40% increase in real income.

Farmers, too, are making more money, but their number is declining. In 1940 it was about 30.5 million; in 1947 the farm population dropped to an estimated 28.8 million.

PUD's Are Making Profit on Puget Sound Property

PUD's that have purchased distribution systems in their areas from Puget Sound Power & Light Co have been doing well financially, according to surveys prepared by R. W. Beck & Associates, engineering and financial advisory firm of Seattle.

The Lewis and Chelan county PUD's earned 1.53 and 1.55 times maximum debt service in 12-month periods ended Nov 30, while the Snohomish County PUD earned 1.74 times its maximum debt service in the first three months of operation. Ratio of operating expenditures to operating revenues was 56.3% for Chelan and 64.6% for Lewis over the one-year period, 53.8% for Snohomish over three months.

Total receipts of the Snohomish and Chelan PUD's ran well ahead of total expenditures. The Lewis PUD spent $41,000 more than it took in, but this was because of clearing costs amounting to $64,000.

The Snohomish PUD, during its first three months, won a 2.5% increase in number of customers, 4.1% in energy sales, and 4.5% in revenues as compared to the same period a year ago.

FINANCIAL BRIEFS

Southern Co will continue to maintain its offices in New York City although the firm has domesticated in Georgia.

Texas Utilities Co will ask for competitive bids this month on 400,000 additional shares of its common stock. Proceeds will be used to supply part of the needs of subsidiaries in their construction programs, amounting to $40 million this year and $30 million in 1951. The present stock of the new holding company was distributed to stockholders of American Power & Light Co, Feb 15.

All the common stock of Upper Peninsula Power Co, Houghton, Mich., will be sold soon. Consolidated Electric & Gas Corp will use proceeds from its sale of 120,000 shares to reduce notes held by banks. Middle West Corp, which will sell 34,000 shares, will distribute proceeds to stockholders. The stock sale also will include holdings by Copper Range Co and by individuals.

Louisville Gas & Electric Co has registered with Securities and Exchange Commission a proposed offering of 101,297 shares of no-par common stock.

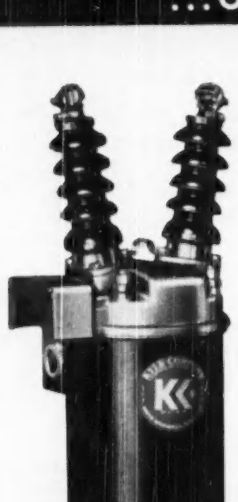
KYLE RECLOSERS

Kyle reclosers offer complete protection for lines, and safety for linemen. They are the original, and still the best, automatic protection for both single and three-phase lines. They offer flexibility to meet all conditions, and precise coordination with fuses, sectionalizers, other reclosers, and station breakers. They avoid lockouts and outages, cut maintenance, and protect your equipment and service.

Outstanding Kyle Recloser Features

Three reclosures before locking out; choice of four opening sequences . . . Coils and sequences easily changed in the field . . . Trip-free operating handle. Tank and cover are dead; bushing terminals are the only live parts . . . Positive dependable operation—no motors or clockwork . . . Large cast aluminum cover; sleet hood protects operating handle and counter . . . Ratings 5 to 50 amps.; 2400 to 15,000 volts; minimum tripping current 10 to 100 amps.; interrupting capacity 150 to 1200 amps.

. . . ON SINGLE-PHASE . . . AND THREE-PHASE LINES



◄ KYLE

TYPE H

Single-phase recloser

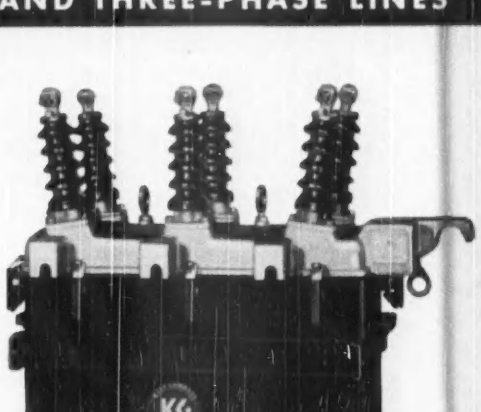
Protects feeders and branch lines on both single- and three-phase systems by coordinating with fuse links, sectionalizers, and other reclosers. Isolates permanent faults to small parts of a system and thus cuts amount of patrolling required.

KYLE ►

TYPE 3H

Three-phase recloser

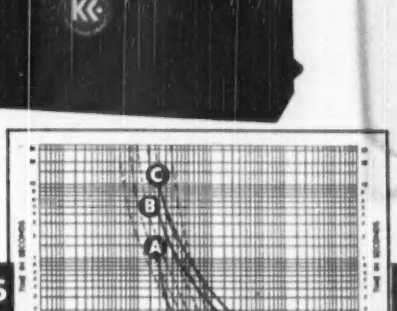
A practical combination of single-pole units so as to permit single-phase operation of any of the three-phase units so long as no lockout is required. If any one unit locks out, the other two lock out simultaneously. Prevents "single phasing" and overloading and burning out 3-phase motors. 7119



CHOICE OF 4 OPENING SEQUENCES

Curves show recloser action on each sequence:

1. Curve A—four fast openings.
2. Curves A and B—two fast, two retarded openings.
3. Curve C—four extra retarded.
4. Curves A and C—two fast and two extra retarded.



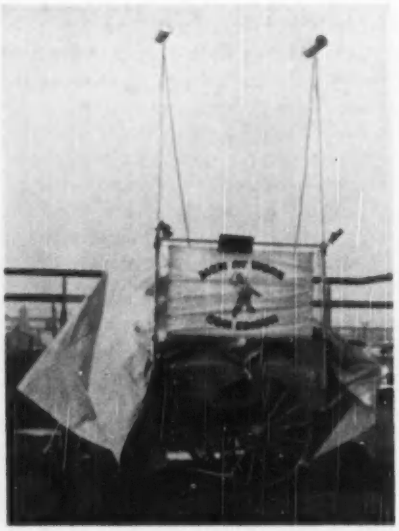
For complete information ask the L-M Field Engineer or write Line Material Company, Milwaukee 1, Wisconsin (A McGraw Electric Company division).

LM

LINE MATERIAL Kyle Reclosers

7119

Complete Coordinated Equipment for All Distribution Requirements

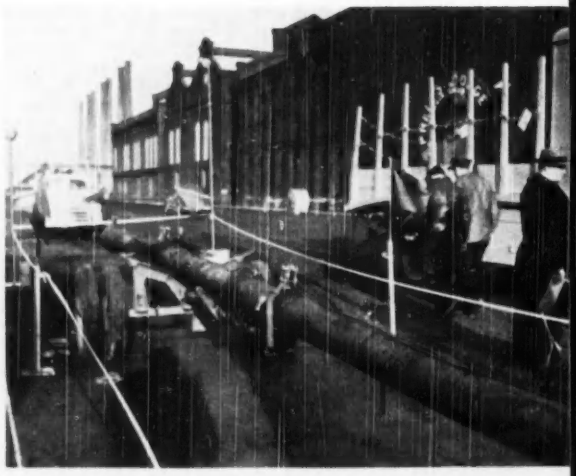


SPLICING CART is set up between oncoming traffic and manhole. Reflecting sign is lit by spotlights

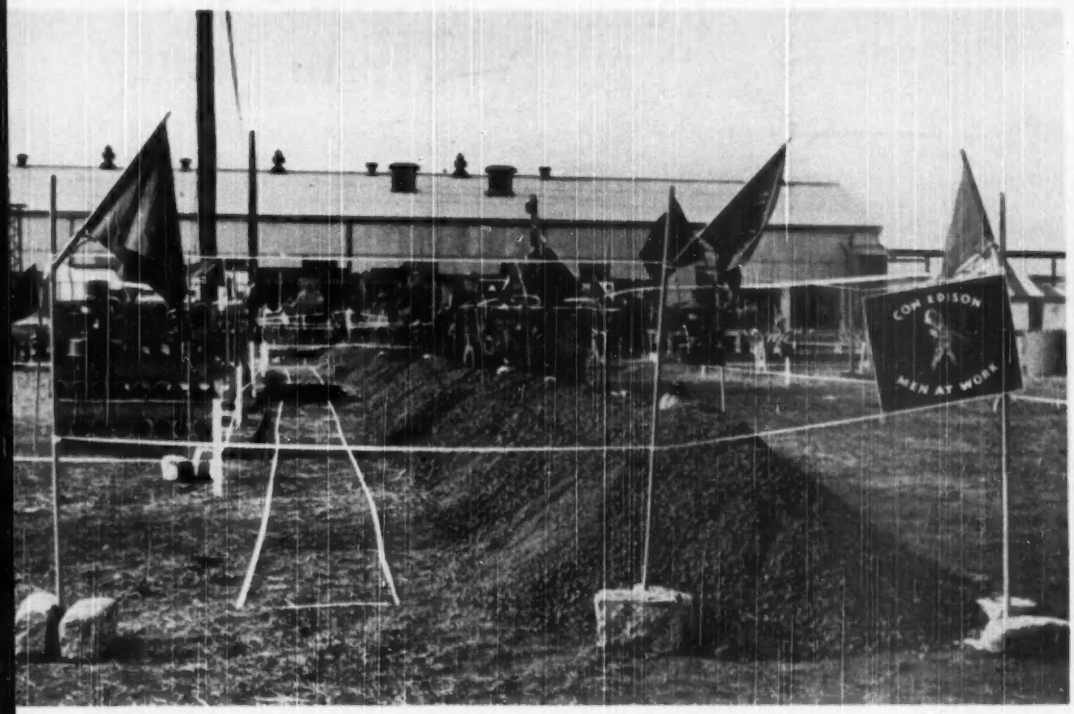
LINEMAN'S TROUBLE TRUCK shows easily visible orange and blue stripes

SAFETY FOR CREWS AND

IN NEW YORK CITY where traffic conditions are normally bad, any interference can mean a dangerous snarl. Into such conditions Consolidated Edison Co must send its crews to maintain its facilities or restore service. Because employees and the public must be protected, Con Ed has made safety a science. The research behind the company's Street Protection Program has extended into many fields. It has involved extensive testing of different colors, mobile equipment, and protective devices; an analysis of street accidents involving Con Ed crews, pedestrians or motor-car operators; and a survey to learn how the street-opening problem—one shared by all public works agencies—was approached in other cities. This program is under direction of Arthur W. Wallander, former New York City police commissioner. Recently he invited city officials concerned with traffic and safety to inspect Con Ed's working practices. The pictures on this centerspread were taken at this demonstration of safety on the job held at the Astoria gas plant of the company.



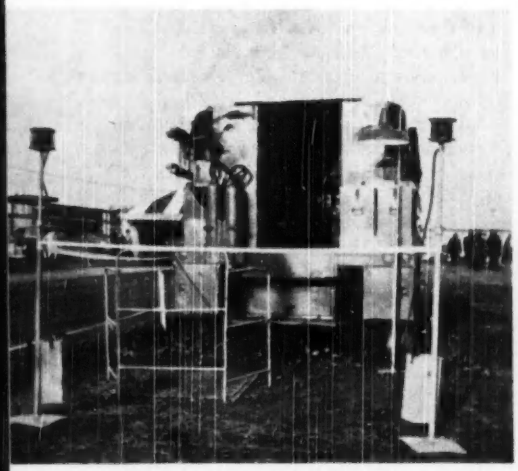
POLE enroute at night or on dark days carries steady lights fed by battery



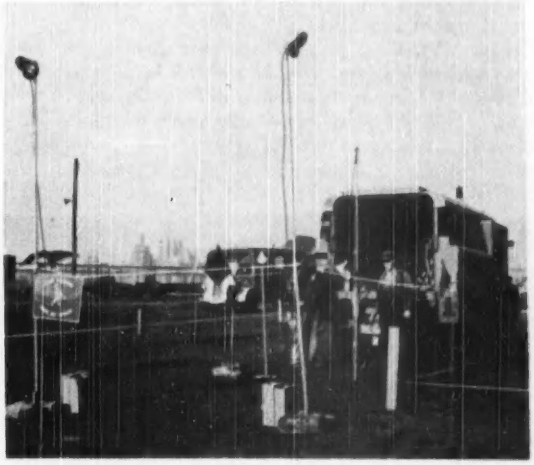
MULATED STREET EXCAVATION shows dirt forming barrier between trench and traffic. Red flags give way at night to red lanterns and flares

PUBLIC

Consolidated Edison Co Makes Safety a Science to Protect Public and Employees When Work Must Be Done in Traffic-Crowded Streets



UCK on location showing 360-deg flashing lights to warn motorists



STREET CORNER job is protected by red flashers in two directions

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Detroit Edison insures the comforts of electricity at lowest cost with its Westinghouse 145,000-kva transformer . . . the largest 3-phase power transformer installed to date.

Higher Voltages...Bigger Transformers... *CUT TRANSMISSION COSTS!*

Everyone agrees that larger transformers, permitting use of larger energy blocks, reduce transmission costs.

That's why, three times in the past three years, Westinghouse has broken world's records in building larger and larger transformers for major utilities . . . building them to *standard* Westinghouse construction specifications.

The transformer illustrated, rated 145,000-kva, HV 135,000 volts wye, LV 15,000 volts delta, is the newest of these giants, installed at Detroit Edison's Trenton Channel Station. Even larger units are now under construction at Westinghouse, where engineering, manufacturing and handling facilities are available to meet the demands of the industry.

For further information, contact your Westinghouse representative, or write for Booklet B-4142 which gives a full description of Westinghouse Power Transformer developments, manufacturing and applications. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-70349

Westinghouse

POWER TRANSFORMERS

Output Dropping Slowly as Coal Strike Continues

As effects of the coal strike widened, electric output dropped in the week ended Feb 25 for the second consecutive week.

In the week of Feb 25 the nation's electric light and power companies distributed 5,854,259,000 kwhr, compared to 5,931,351,000 kwhr the week before. Last week's output, however, was 5.3% above the corresponding week of 1949, when the figure was 5,559,207,000 kwhr.

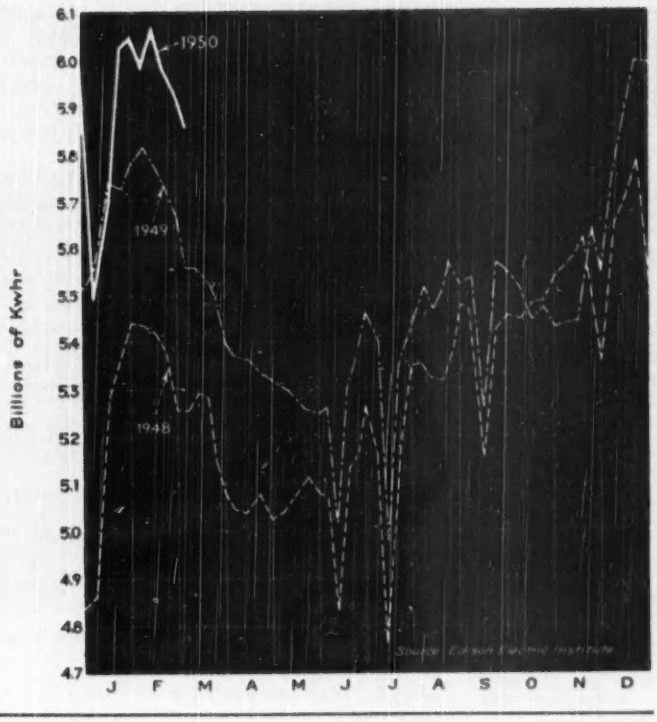
All regions of the United States again showed gains above last year.

Weekly Output, Millions Kwhr

1950		1949		1948	
Feb 25	5,854	Feb 26	5,559	Feb 28	5,252
Feb 18	5,931	Feb 19	5,630	Feb 21	5,254
Feb 11	5,971	Feb 12	5,722	Feb 14	5,385
Feb 4	6,062	Feb 5	5,778	Feb 7	5,412
Jan 28	5,972	Jan 29	5,810	Jan 31	5,429
Jan 21	6,041	Jan 22	5,769	Jan 24	5,436
Jan 14	6,029	Jan 15	5,727	Jan 17	5,370
Jan 7	5,695	Jan 8	5,742	Jan 10	5,278
1949		1949		1948	
Dec 31	5,493	Jan 1	5,562	Jan 3	4,868
1949		1948		1947	
Dec 24	5,994	Dec 25	5,508	Dec 27	4,826

Percent Change from Previous Year

	Feb 25	Feb 18	Feb 11
New England	+13.4	+10.2	+ 9.6
Mid-Atlantic	+ 5.8	+ 4.7	+ 3.3
Central Industrial	+ 2.1	+ 2.2	+ 1.2
West Central	+ 7.0	+ 6.6	+ 4.9
Southeast	+ 8.8	+ 6.9	+ 3.7
South Central	+ 7.1	+11.0	+12.2
Rocky Mountain	+ 1.2	+ 1.5	+ 2.3
Pacific Coast	+ 3.5	+ 4.5	+ 7.7
Total United States	+ 5.3	+ 5.0	+ 4.3



MEETINGS

National Rural Electric Cooperative Association
Annual Convention, Hotel Stevens, Chicago, Ill., March 6-9.

National Electrical Manufacturers Association
Edgewater Beach Hotel, Chicago, Ill., March 13-16.

Industrial Electrical Show
Exposition of Commercial and Industrial Equipment sponsored by Electrical Maintenance Engineers Association of Southern California, Inc., Shrine Convention Hall, 700 West 32nd St., Los Angeles, Calif., March 15-18.

Edison Electric Institute
Industrial Relations Committee, EEI headquarters, New York, N. Y., March 16, Netherland-Plaza Hotel, Cincinnati, Ohio, April 20; Annual Sales Conference, Edgewater Beach Hotel, Chicago, Ill., April 4-6; Purchasing and Stores Committee, Schroeder Hotel, Milwaukee, Wis., April 24-26; Electrical Equipment Committee, Edgewater Beach Hotel, Chicago, Ill., May 2-3.

Conference for Protective Relay Engineers
Department of Electrical Engineering, Agricultural and Mechanical College of Texas, College Station, Tex., March 20-22.

Southeastern Electric Exchange
Engineering and Operation Section, Buena Vista Hotel, Biloxi, Miss., March 23-24; Annual Conference, Greenbrier Hotel, White Sulphur Springs, W. Va., April 12-14.

American Public Power Association
Annual Convention, Shoreham Hotel, Washington, D. C., March 28-30.

Missouri Valley Electric Association
Engineering Conference, President Hotel, Kansas City, Mo., March 29-31; Accounting Conference, President Hotel, Kansas City, Mo., May 18-19.

Pennsylvania Electric Association
Communications Committee, Spring Meeting, Lawrence Hotel, Erie, Pa., March 30-31; Industrial Committee, Industrial Power Conference, Bedford Springs Hotel, Bedford, Pa., May 2-3. Transmission and Distribution Committee, Spring Meeting, Alexander Hotel Hagerstown, Md., May 25-26, Joint Meeting, Traffic Safety Committee, May 26.

Midwest Power Conference
Sherman Hotel, Chicago, Ill., April 5-7.

American Institute of Electrical Engineers
Conference on Protective Welding, Hotel Detroit Leland, Detroit, Mich., April 5-7; Great Lakes District Meeting, Hotel Hayes, Jackson Mich., May 11-12.

American Society of Mechanical Engineers
Spring Meeting, Hotel Statler, Washington, D. C., April 12-14.

Northwest Public Power Association
Semi-annual Convention, Davenport Hotel, Spokane, Wash., April 17-19.

American Institute of Electrical Engineers
Power Conference sponsored by Committee on Power Generation, Industrial Power System, and System Planning, William Penn Hotel, Pittsburgh, Pa., Power Generation, April 19; Industrial Power System, April 20.

Electrochemical Society
Annual Convention, Statler Hotel, Cleveland, Ohio, April 19-22.

Oklahoma Utilities Association
Annual Convention, Biltmore Hotel, Oklahoma City, Okla., May 4-5.

New Jersey Utilities Association
Annual Spring Conference, Seaview Country Club, Absecon, N. J., May 12.

★ **Pacific Coast Electrical Association**
Annual Convention, Mapes Hotel, Reno, Nev., May 31-June 2.

★ Addition This Week

Duquesne Light Co Asks for General Rate Raise

Duquesne Light Co, Pittsburgh, has asked the Pennsylvania Public Utility Commission for the first general rate increase in the company's history.

The schedule filed with the commission would become effective April 10. It provides for additional annual revenue of $7,697,000, of which $3,164,000 would be paid by the 354,000 residential customers and the remainder by 44,000 commercial, industrial, and other users. For the average residential customer the monthly bill would go up about 69¢. Rate of return for Duquesne would be 5.10%.

In advertisements published in Pittsburgh and community newspapers, the company pointed out that while its operating revenues have risen 64% since 1940 operating expenses jumped 104%.

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To Build 40,000-Kw Plant

Florida Power Corp will build a power plant at Booth Point, near Oldsmar, in Pinellas County. The initial unit will be 40,000 kw, but two other units of the same size will be added later. Oil will be used for fuel.

IN THE INDUSTRY

WILLIAM B. WHICHARD

WHILE LESS PRACTICAL public power enthusiasts clamor for additional TVA-type valley authorities, the Department of Interior contents itself with establishing new power administrations. And well it might, under the circumstances.

Interior is just now in the process of launching its third such venture, the new Southeastern Power Administration (see p. 4). The new agency has two well established predecessors in the same business under Interior's wing in the Bonneville and Southwestern Power Administrations. But of all the valley authority proposals advanced since Bonneville came into being 13 years ago, only two have received more or less serious consideration. And even these, the proposed Columbia Valley Administration and Missouri Valley Authority, show little sign of progressing beyond the discussion stages.

The trouble with valley authorities, as diagnosed by Interior early in the game, was they needed laws to create them and that required Congressional action. Congress, having given unto TVA more of its own prerogatives than it realized at the time, has been chary ever since about new valley authorities.

So the Department, once enthusiastic over the TVA idea—with minor amendments, such as placing all valley authorities in Interior, of course—began casting around for the next best thing. Two entirely unrelated acts of Congress supplied the foundations for the alternative.

The Bonneville Act of 1937, setting up the Bonneville Power Administration to market energy produced at Reclamation Bureau and Army hydro plants in the Pacific Northwest, provided the pattern for the type of agency Interior wanted. But Congress at the time neglected to delegate to Interior the authority to set up similar administrations. Then, in the Flood Control Act of 1944, the Department was designated to market power from plants built by the Army Engineers thereafter in any locality. It was no trick at all for Interior's attorneys to interpret this directive as authorization for establishing power marketing staffs.

That is virtually the entire legal basis for the existence of the new Southeastern Power Administration. True, in a lefthanded fashion, Congress gave it approval by appropriating funds last year to set up the new agency. But the initial appropriation of $70,000, included in a total of nearly $600 million for Interior, must have seemed hardly worth arguing over to all but a few Congressmen. On the other hand, Interior officials have estimated that Sepa's costs may mount to upwards of $250,000 by 1954. And the agency by that time will be responsible for sales of power from plants in which the Government will have invested millions.

Administratively, the power administration plan makes considerable sense. Conceivably Interior might wholesale energy in such remote spots as Seattle, Tulsa, and Atlanta from the Department in Washington. But it must be easier to operate through field organizations in those areas. Unfortunately, there is always the chance that such field staffs will undertake activities that make a lot less sense.

Meanwhile, few people, outside Interior, appear to appreciate the significance of the power administrations. Though lacking the broader powers of TVA, these agencies are real political and economic forces of no mean proportions because they control all the federal power generated in three large areas. And it looks as if they can be set up wherever an Army hydroelectric plant is erected.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Evaporator tube scale can be removed by subjecting them to a sudden change of temperature, water after steam or vice versa.

Preheating of generator fields is not widely practiced as a start-up precaution, although it may be justifiable in the case of long rotors.

Dust collectors can make the difference between 12 weeks and 12 years of life of induced-draft fan blades and scroll wear plates.

Whirling "typewriter erasers"—rubber discs with embedded abrasive—cut metal faster and cleaner than a saw.

Fly ash was used in a 25/75 ratio with portland cement in a 1/2/4 mix concrete retaining wall at State Line Station and has withstood the ravages of Lake Michigan for 13 years.

Meter socket and trough standardization on a comprehensive basis would lead to more licensing of more producers.

Cable temperatures are, of course, dependent on the load they carry, but the important factor is the rate of dissipation of the heat generated by the losses.

Power lines would achieve even better realization from carrier installations if the couplers and traps both had broader band characteristics than is now the vogue.

Zig-zag connection for a grounding transformer is less expensive than a 2-winding grounding bank, because, it takes less copper and iron for the same ground current.

MANUFACTURERS and MARKETS

DR WARD HARRISON, engineering consultant and past director of engineering for General Electric Co's Lamp Department at Nela Park, Cleveland, Ohio, has received the Cleveland Technical Societies Council's annual Distinguished Service Award. Dr Harrison, left, is congratulated by James L. Myers, president of Cleveland Graphite Bronze Co, who made the presentation. Joseph E. Wilhelm, council president, displays the citation

Westinghouse 1949 Earnings Highest of Record; Price Predicts Rosy 1950

Westinghouse Electric Corp earned more money in 1949 than in any other year of its history. Net income of $67,268,555, equal to $4.95 a share on the common stock after payment of preferred stock dividends, was reported last week by Pres Gwilym A. Price at a New York press conference.

"A number of factors were responsible for making possible this higher net income," Price said. "Among these were new and more efficient manufacturing facilities which have been brought into production since the war, operating economies, and the excellent teamwork of the 92,565 Westinghouse employees. The greater availability of steel and other materials enabled the company to schedule its purchases more nearly in line with production requirements."

Westinghouse net sales billed for 1949 totaled $945,699,382, a reduction of $24,974,465 below 1948, when billings reached $970,673,847. The 1949 net income was 7.1% of net sales, the best showing since the war but well under many of the prewar years. Price termed this return "fair and adequate." In 1948 net income was equal to a return of 5.7¢ on each sales dollar, before provision for a contingent inventory reserve.

New orders were down 8.9%—from $1,032,466,216 in 1948 to $940,867,421 in 1949. The backlog of unfilled orders at the end of the year was down to $533,606,888 from $648,862,423 in 1948.

The Westinghouse president was optimistic about conditions this year. "Assuming that there are no prolonged major strikes, and that costs and prices can be kept within bounds, a continued good market for Westinghouse products is anticipated during 1950," he asserted.

Price pointed out that consumer products, principally appliances, radios, television receivers, and lamps, accounted for 26% of sales in 1949. The market was steady as the year ended. The company has on hand a month's supply of coal and a fair amount of steel. Negotiations with utilities are picking up, and steel installations are increasing. All these factors indicate that the present year should be a satisfactory one.

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A. O. Smith Corp Revamps Manufacturing and Sales

A. O. Smith Corp, Milwaukee, has contracted for new manufacturing and supply facilities and has set up a more flexible sales organization.

Whirl-A-Way Motors, Inc, Tipp City, O., will manufacture SMITHway fractional horsepower motors to specification for distribution in the eastern United States. The western part of the country will continue to be served by Smith's Los Angeles plant.

D. L. Mills, president of Whirl-A-Way, has been appointed eastern regional sales manager of the Smith motor division, with headquarters in Dayton, Ohio. Under him will be three eastern area sales managers: Hal E. Rowland, with headquarters in Dayton; J. P. Hoffberger, New York; and R. O. Dehlendorf, Chicago.

Sales in the 11 Western states will be directed from the Los Angeles plant, which will also supervise sales in the Southwest under area sales manager George H. Nichols, Houston, Tex.

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Foreign Firms Inquire about Sales to Seattle

Seattle City Light again may have to face the problem of what to do with foreign bids for electrical equipment.

Superintendent E. R. Hoffman reported the city had received requests from three British manufacturers, one in France, and one Italian to be kept advised of future bid calls for transformers and other electrical equipment. Swiss consular officials also have asked for information about the city's contract procedure.

The foreign interest followed submission of low bids by two British firms on construction of transformers for City Light's new Ross powerhouse. The English proposals, as much as $200,000 below the lowest American bid, were

rejected for failure to meet specifications but drew much attention here and abroad.

Ferranti, Ltd., Hollinwood, England, one of the two British firms whose bids were rejected, has appointed William K. Stamets, Jr. Seattle consulting engineer, as exclusive representative in Washington, Oregon, Montana, Idaho, and Alaska for the sale of power transformers and voltage regulators. Stamets said Ferranti will continue to seek American business, particularly in view of the British dollar shortage.

The next City Light equipment bid call is expected in April, involving transformers for a new Bothell substation.

MANUFACTURING BRIEFS

C. P. Clare & Co, 4719 W Sunnywide Ave, Chicago 30, Ill., relay manufacturer, has become exclusive distributor in the United States of Carpenter polarized relays. The product is manufactured by the Telephone Manufacturing Co, Ltd, London.

Western Insulated Wire Co, Los Angeles, has begun construction of a $500,000 factory for the manufacture of its neoprene-jacketed electric cord. E. H. Lewis, president, said the plant would be the only one of its kind west of Chicago.

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New Sales Assignments

Electrical manufacturing companies have appointed the following sales representatives:

Westinghouse Electric Corp's Lamp Division has created a new North Pacific sales division with headquarters at Seattle. The new division includes Washington, Oregon, northern Idaho, and central and western Montana. Frank T. Anderson is manager.

D. W. Onan & Sons, Inc, Minneapolis, has appointed Frank Gernand, Portland, Ore., direct factory sales representative covering the entire West Coast and Alaska.

Electric Products Co, Cleveland, has appointed J. J. Costello Co., with offices in Boston and New Haven, as New England representative.

Lincoln Electric Co, Cleveland, has given C. L. Stocker sales and engineering responsibilities in the San Francisco area, with district office at 1303 Stanford Ave, Emeryville, Calif. M. F. Yale and T. Nichol have been added to the Emeryville welding engineering staff. A. L. Patnik has been made responsible for Lincoln welding engineering in the Seattle district, with offices at 1914 Utah Ave, Seattle.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

California—Bureau Reclamation, Elverta, constr. Sacramento and San Joaquin River crossing towers for 230-kilovolt Shasta-Tracy transmission lines Nos. 1 and 2 (west side lines) Central Valley Proj., for Sacramento River crossing is on east side of Sacramento River approx. 1 mi. south of Rio Vista, and San Joaquin River crossing is on each side of San Joaquin River approx. 4 mi. southeast of Rio Vista, Spec. 2923. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

Kentucky—Kentucky Utilities Co., E. W. Brown, ch. engr., First National Bank Bldg., Lexington, 34 mi. 132,000 volt transmission line to connect to Ohio Power Co. line (Portsmouth-Trenton) with Maysville, Ky.; 32 mi. 69,000 volt transmission line from Maysville to Moorehead, connecting with Kentucky and West Virginia Power Co. system, substation at Maysville, Mason, Fleming and Rowan Counties. **$500,000.**

Minnesota—Mille Lacs Region Co-operative Power & Light Assn., Aitkin, 212 mi. rural distr. lines, Aitkin, Mille Lacs and Crow Wing Counties, Proj. Minnesota 81 H. Aitkin. Approx. $200,000. Plans deposit $10. United Eng. Service, 600 Kasota Bldg., Minneapolis, engrs.

Nebraska—Consumers Public Power Dist., Columbus, 115,000 volt substations at Norfolk, Neligh and O'Neill, 24,500 volt substations at Havelock at O St. and at College View, Lincoln. $250,000.

Nebraska—Howard-Greeley Rural Public Power Dist., St. Paul, labor for 342 mi. rural distr. lines, Howard and Greeley Counties. $120,000. H. S. Nixon Eng. Co., W. O. W. Bldg., Omaha, engr.

N. Y., Penn Yan—Village of Penn Yan, electric light and power plant and altering existing plant. **$480,230.**

New Mexico—Central New Mexico Electric Co-operative, Corona, 418 mi. rural distr. lines 21 mi. 34 kv transmission line, addnl. generating facilities and sys. improvs., Lincoln Co. **$1,560,000.**

North Dakota—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., one 112.5 kva, three 50-kva, one 37.5-kva, two 10-kva, two 5-kva, and three 3-kva transformers; one 600 kva and three 156 kva stepvoltage regulators; one 230,000-volt, nine 115,000-volt, five 69,000 volt, eight 46,000 volt, and two 14,400-volt circuit breakers; five 12,500 volt circuit reclosers, three 115,000-volt, four 69,000-volt and four 46,000-volt interrupter switches; two 230,000-volt, twenty-eight 115,000-volt, thirty-six 69,000-volt, fifty-six 46,000 volt, and fifty-four 15,000 volt air switches; six 46,000 volt and thirteen 15,000 volt disconnecting fuses for substations for Central North Dakota power sys., Missouri River Basin Proj., Transmission Div., Spec. 2924.

North Dakota—Bureau Reclamation, Dpt. Interior, Bismarck, Jamestown-Edgeley 115-kilovolt and Edgeley-Forman 69-kilovolt transmission lines, Transmission Div., Missouri River Basin Proj., Spec. 2884. Entered date.

Okla., Elk City—Public Service Co. of Oklahoma, 600 S. Main St., Tulsa, two 6,000 kw. gas turbine generator units in power plant. **$2,000,000.**

Oregon—Benton-Lincoln Electric Co-operative, Inc., 561 Van Buren St., Corvallis, 64.62 mi. 7.2/12.5 kv rural distr. lines and 43.2 mi. 69 kv and rural distr. lines, Lane and Benton Counties. Plans deposit $10. James A. Brigman, c/o owner, engr.

S. D., Watertown—City, boiler plant addn. **$700,000.** Ralph D. Thomas & Assoc., Inc., 400 Metropolitan Life Bldg., Minneapolis, Minn., consult. engrs.

South Dakota—Black Hills Electric Co-operative, Custer, plans by D. O. Flahart, Rapid City, 47 mi. rural distr. lines, completing previously approved construction, 2 way radio, Custer Co. **$155,000.**

Texas—Brazos River Transmission Electric Co-operative, Inc., R. W. Miller, mgr., 902 Amicable Bldg., Waco, 52.4 mi. 69-kv H frame rural dist. lines, Hill and Ellis Counties. **$240,000.** Plans deposit $25.

Low Bidders & Contracts Awarded

Fla., Tallahassee—City, City Hall, complete new main electric light and power plant at St. Marks in Wakulla Co., to Ivy H. Smith, 1525 San Marco Blvd., Jacksonville, Zone 7. **$1,232,514.** Bids 2/13, awarded 2/15.

Mich., Detroit—The Detroit Edison Co., 2000 2 St., 117 story, 145x327 ft., masonry, structural steel, Conners Creek Power Station superstructure, to O. W. Burke Co., 1032 Fisher Bldg. Approx. **$4,500,000.** Awarded 2/6.

O., Cleveland—Cleveland Electric Illuminating Co., 75 Public Square, turbine locomotive boiler, electric houses and service bldg., superstructure for power plant at Lake Shore Plant, 712 E. 70 St. to Hunkin-Conkey Constr. Co., 1740 E. 12 St. Approx. **$1,000,000.** Awarded 2/14.

Tex., Houston—Houston Lighting & Power Co., 1016 Walker St., substation (north side), force account. **$300,000.**

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Ill., Chicago—City, City Hall, Zone 2, 7 garages circling Chicago Loop District, **$15,585,450.**

Mich., Detroit—Detroit-Wayne Co. Joint Bldg. Auth., c/o Harley-Ellington & Day, archts., 153 E. Elizabeth St., 10 story, 10,000,000 sq. ft. masonry, concrete city-county bldg. **$15,000,000.**

Okla., Stillwater—Oklahoma A & M, c/o Dr. Henry G. Bennett, pres., Stillwater, engineering laboratory bldgs. **$1,000,000;** 3 and 4 story poultry industry bldg., **$250,000;** 3 story architectural bldg. **$500,000;** 4 story, approx. 49,000 sq. ft. masonry classrooms bldg. **$500,000;** 4 story, 67,000 sq. ft. masonry chemistry bldg. **$750,000;** warehouse and maintenance shop, **$250,000;** women's physical educ. facilities, incl. 2 corridor and tunnel connecting bldgs. one a swimming pool and other a gymnasium, **$500,000;** 3 story physics and mathematics bldg., **$750,000.**

Tenn., Knoxville—State Bldg. Comn., State Capitol, Nashville, plans by Bauman & Bauman, 813½ Market St., cancer research hospital to be operated by University of Tennessee. **$6,000,000.**

Tex., Orange—E. I. du Pont de Nemours & Co., Orange, nylon intermediates processing plant, at Sabine River Works. Approx. **$5,000,000.**

Low Bidders & Contracts Awarded

Utah, Salt Lake City—U. S. Eng., 180 New Montgomery St., San Francisco, Calif., Feb. 16, 500 bed rein.-con., brick hospital, 4 residential bldgs., 1 boiler plant and shop; 1 kitchen bldg.; 1 recreational bldg.; 1 theatre bldg.; 1 laundry; 1 gas meter house, incl. utilities, for Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., from Wunderlich & Curtlett, 820 W. Esther St., Long Beach, Calif. **$7,898,000.**

Wash., Seattle—Marshall Field & Co., 25 E. Washington St., Chicago, Ill., general contract 5 story Frederick & Nelson Department Store addn., to Henrik Valle Co., Inc., 407 3 Ave. W. Total est. Approx. **$6,500,000.**

"Installed in 1941...Still No Maintenance"

— SAYS POWER ENGINEER ST. BERNARD, OHIO

ACCORDING TO LEO E. HEIMERT, "Their performance can't be beat. They were put in service nine years ago, and we have yet to see any sign of needed maintenance. Regulation has been tops!"

What are the reasons behind this typical performance?

1. Allis-Chalmers Rocking Contact Generator Voltage Regulators have no vibrating contacts, no gliding friction, no complex adjustments. The few moving parts are all supported in jeweled bearings. See below how simple and friction-free this makes the unit.

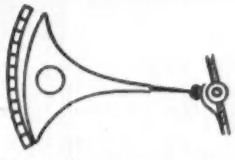
2. They're genuinely precision-manufactured. Sectors rock on accurately machined commutator segments that are silver surfaced for positive contact, long life.

No wonder Allis-Chalmers Rocking Contact Regulators are preferred by many as the finest for their systems! If you want long years of trouble-free service, specify *Rocking Contact* Generator Voltage Regulators for your next switchgear or switchboard . . . or replace inefficient regulation now! Call your nearby A-C representative or write direct. A-2967

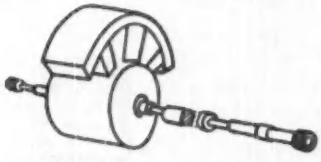
ALLIS-CHALMERS, 932A SO. 70 ST.
MILWAUKEE, WIS.

WHY POWER ENGINEERS IN UTILITIES, MUNICIPALITIES AND INDUSTRY PREFER ALLIS-CHALMERS ROCKING CONTACT REGULATORS:

Each commutator segment is connected to a wire wound resistance element that is accurately designed according to the characteristics of *your* generating equipment. Resistance elements are air cooled —commutator is in dust-tight enclosure.



Rocking Contact sector pivots on jeweled bearing . . . has smooth working, hard graphite face that rocks on curved, silver surfaced commutator . . . regulates with slight movement . . . reduces wear . . . maintains accuracy.



Quick acting torque motor drives Rocking Contact Sector . . . has jeweled bearings for rapid, accurate, anti-friction movement. Aluminum rotor reduces inertia . . . increases speed of response.

ALLIS-CHALMERS

C-E REHEAT BOILERS

DUNKIRK STEAM STATION

Niagara Mohawk Power Corporation

The C-E Unit, shown here, is one of two duplicate steam generating units of the reheat type soon to go into service at the Dunkirk Steam Station of the Niagara Mohawk Power Corporation.

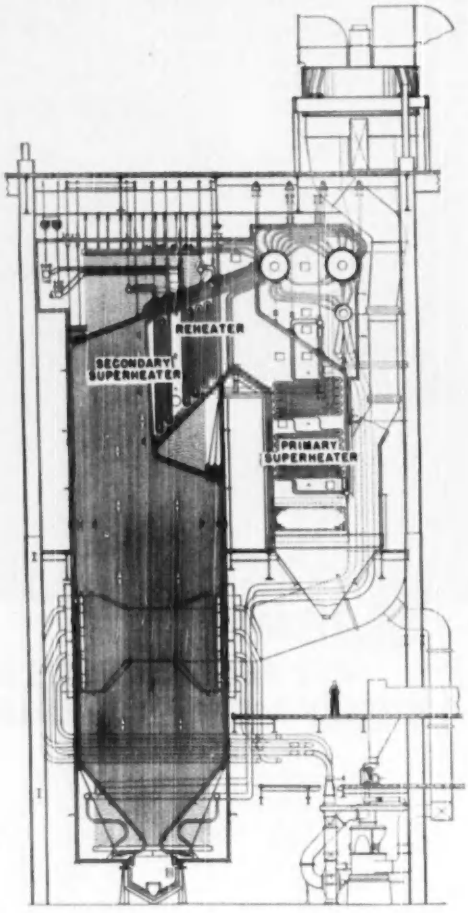
Each of these units will serve a 100,000 kw turbine generator operating at an initial steam pressure of 1450 psi and a temperature of 1000 F reheated to 1000 F.

The units are of the radiant type with a reheater section located between two stages of the primary superheater surface. A finned tube economizer is located below the rear superheater section, and regenerative air heaters follow the economizer surface.

The furnaces are fully water cooled, using closely spaced plain tubes throughout. They are of the basket-bottom type, discharging to sluicing ash hoppers.

Pulverized coal firing is employed, using bowl mills and vertically-adjustable, tangential burners.

B-385



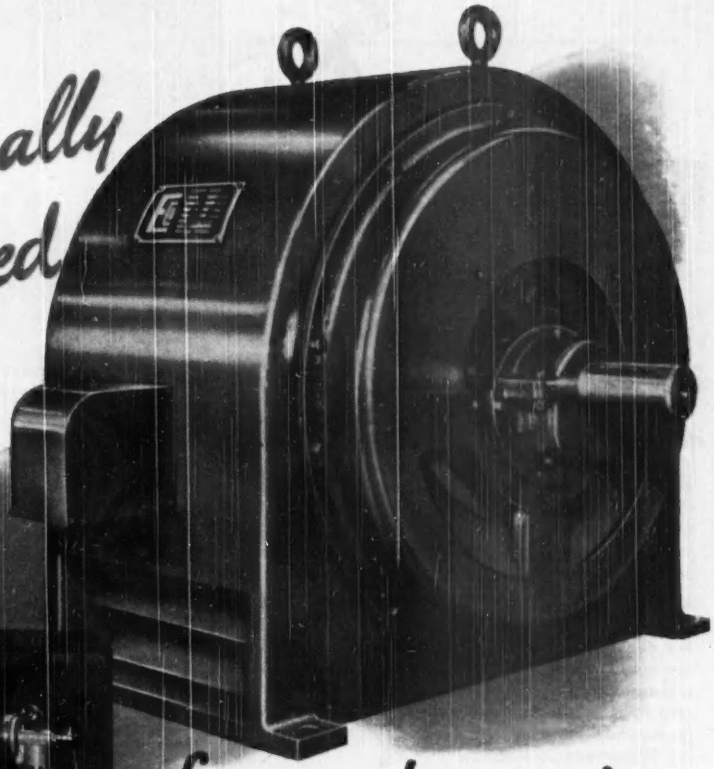
C-E

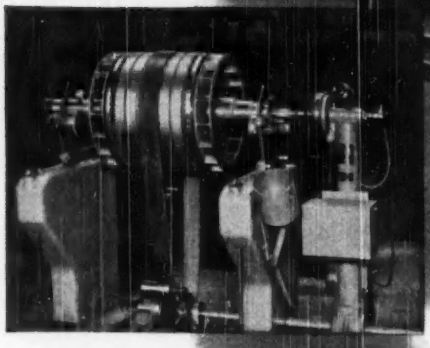
COMBUSTION ENGINEERING—SUPERHEATER, INC.

200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS

Dynamically balanced rotor..





...for smooth operation

You can stand a nickel on its edge atop the new Fabri-Steel motor while it is running. There is no perceptible vibration. The careful dynamic balancing of the rotor shares credit for this result with the exceptional stiffness of the fabricated steel construction. The entire motor is stiffly built — stator punchings stacked on a mandrel, compressed hydraulically, and secured by angle bars welded to end plates and frame side plates. It's a new way to build a motor and it pays dividends in performance.

150 to 2000 hp—four to fourteen poles—drip-proof, splash-proof, outdoor splash-proof, enclosed separately (forced) ventilated, enclosed self (pipe or base) ventilated. Write to Dept. EN for 7000-2 bulletin.

OTHER THINGS YOU'LL LIKE IN THIS NEW MOTOR

- 30% lighter weight in bearing bracket, 10% lighter in entire motor than previous cast iron designs–
- Split sleeve bearings–
- The strength and rigidity of welded all steel construction–
- Directed ventilation–
- Uniform air gap–
- Non-cracking steel feet–
- Adjustable conduit box–

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DEPT. EN • RIDGWAY DIVISION • RIDGWAY, PA.
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Elliott FABRI-STEEL Motors

L-777C

ELEMEX
Capacitors

in stainless steel tanks...

do a good job...good enough to do it!

ELEMEX capacitors produce more pay load on a distribution system by supplying kilovars economically at or near the load. They cut copper losses, raise voltage, and increase carrying capacity of feeders and other equipment.

ELEMEX capacitors do this job well . . . they are good enough to do it for a long time. Highest quality, low-density paper used in each pack . . . humidity-controlled rooms . . . individual control of evacuation and capillary impregnation with ELEMEX liquid . . . step-by-step testing of each individual unit throughout production. Those are some reasons for their outstanding 5-year service record.

Many Desirable Features

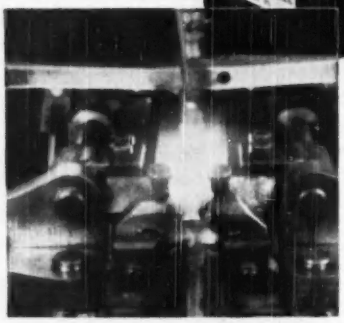
Stainless steel tanks . . . uniform terminal elevation above hangers for both 15 and 25 kvar sizes in each voltage class . . . L-M "Paragroove" connectors . . . L-M "Lifetime" solder-sealed bushings . . . sturdy, wood-reinforced shipping cartons.

Ask the L-M Field Engineer for the whole story; or write Capacitor Division, Line Material Company, Milwaukee 1, Wisconsin.

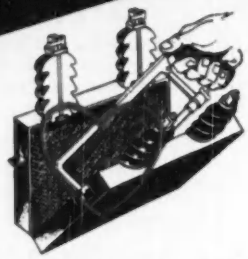
Corrosion-free Welding of Stainless Steel Tanks

ELEMEX capacitors come to you in stainless steel tanks, which never need painting. They save installation time because the lineman doesn't have to repair scratches or gouges caused by handling . . . doesn't have to scrape paint to get a good ground. And they *do* cut maintenance costs!

Tanks and covers are fabricated by the well-known Heliarc welding process. This method applied to stainless steel of very low carbon content assures a finished tank that is free of corrosion—*even at the welds.*



"Heliarc" welding of stainless steel tanks. Arc travels up one side, across, and down the other, butt-welding the seam visible in the slot in the jig.



Low Unit Stress Assures Long Life

Conservative design, with lowest stress on packs and insulation. Heavy laminated major insulation, folded at the corners without slitting, assures uniformly high impulse strength.

7130

LINE MATERIAL . . . Capacitors

Complete Coordinated Equipment for All Distribution Requirements

NEWS ABOUT PEOPLE

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J. N. SICARD

M. T. BANCROFT

Shawinigan, Quebec Companies Pick Vice-Presidents, Other Executives

J. A. Fuller, vice-president of Shawinigan Water & Power Co, Montreal, has been named executive vice-president.

Other executive changes in the system include the election of E. Donald Gray-Donald, chief engineer of Quebec Power Co, as vice-president and chief engineer of Shawinigan, with R. H. Mather as his assistant. J. N. Sicard, general manager, and M. T. Bancroft, comptroller, were made vice-presidents of Quebec Power. A. C. Abbott succeeds Mather as manager of the Shawinigan commercial and distribution department.

Fuller has been a vice-president since 1947. He was appointed assistant to the president in 1945. At the same time he became vice-president of Shawinigan Chemicals, Ltd, of which he had been secretary-treasurer.

Gray-Donald, who is president of the Canadian Electrical Association, has been with Quebec Power since 1927. He has served as assistant superintendent and superintendent of the power division, assistant general superintendent, and general superintendent. In 1942 he was named chief engineer.

Sicard has been with the Shawinigan companies since 1919. He was transferred to Quebec Power in 1942 as general superintendent and became general manager in 1943.

Mather has been manager of Shawinigan's commercial and distribution department since 1934 and is a former president of the Canadian Electrical Association. Among posts he has held with the company are those of design engineer, power sales engineer, electrical engineer of subsidiary distribution companies, and assistant manager of the commercial and distribution department. Abbott has been assistant manager of the department since 1948 and has served as chairman of several CEA committees.

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Henry B. Taliaferro will succeed Ben Creim, new administrator of Southeastern Power Administration, as regional power manager for the Bureau of Reclamation's Sacramento, Calif., region. A graduate of the United States Naval Academy, Taliaferro worked for Potomac Electric Power Co, then was office engineer to the chief of construction at Bonneville and later assistant to the chief engineer in charge of the BPA office in Washington, D. C. Since the war he has been Creim's assistant, concentrating on construction of electrical works and the marketing of power from the Central Valley Project.

F. C. Wagner, chief engineer of Central Power & Light Co's Nueces Bay and Water Street plants in Corpus Christi, has been named superintendent of power stations in charge of operations and maintenance. **L. M. Hartman,** formerly Wagner's assistant, is now chief engineer of the two Corpus Christi plants, and **T. A. Ford,** former chief electrician there, is now assistant to Hartman. Wagner joined the company in 1926 and was made chief engineer of the two plants in 1929.

H. Walter Regensburger has been appointed chief engineer of the general engineering department of Link-Belt Co, Chicago, to succeed **Harry L. Strube,** who has retired. The department has been transferred from Philadelphia to 301 W. Pershing Road, Chicago. Assisting Regensburger will be **Charles M. Young, Jr,** as chief developmental engineer, and **Harold F. Watson** as chief standards engineer. Regensburger, who joined Link-Belt in 1926, has been at the Pershing Road

plant since 1947, first as divisional engineer and then as assistant chief engineer.

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New Assignments

Julian C. Hensbarger has been promoted from assistant Welch district manager of Appalachian Electric Power Co to Logan district manager. He succeeds **Sam R. Pritchard,** who will take over as district manager at Huntington. **Dr Matthew Luckiesh,** who recently retired as director of General Electric Co's Lighting Research Laboratory, has been appointed director of research and development for Foster & Davies, Inc, Cleveland advertising agency. . . . **J. Wiley Bowers,** Chattanooga, is the new executive secretary of the Tennessee Valley Public Power Association. . . **Raymond B. McFarland** has been named director of the lighting division of Central Maine Power Co, Augusta. He has been with the company since 1938, first as a field lighting engineer in the Rockland and Lewiston areas and then as assistant director. Last year he was a prize winner in the merit award competition sponsored by Edison Electric Institute. . . . William H. Montgomery has been appointed personnel supervisor for Ohio Power Co's Philo plant.

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Donald C. Campbell has been appointed assistant to the managing director of the Canadian Electrical Association. He formerly was with Dominion Textile Co, Ltd.

Walter G. Small, distribution consultant of Brockton (Mass.) Edison Co since 1947, has retired. He joined Lowell (Mass.) Electric Light Corp in 1905 and the Brockton company in 1910. In 1916 he was appointed superintendent of distribution.

T. A. Ealing, lighting engineer in Southern California Edison Co's Los Angeles general offices, has been appointed manager of the Oxnard, Calif., district. He succeeds **Carl Elgan,** Oxnard manager since 1942. Elgan had been with the company since 1918.

OBITUARY

Harry Sanford Brown

Harry Sanford Brown, president and chairman of the board of Foster Wheeler Corp, New York, died suddenly Feb 18 following a heart attack aboard a liner en route to Rio de Janeiro.

Brown managed the Boston office of Power Specialty Co from 1904 until 1918, when he left to become vice-president of Wheeler Condenser & Engineering Co. When the two companies were consolidated to form Foster

HARRY SANFORD BROWN

Wheeler in 1927 he was made vice-president and a director. He was elected president in 1935 and chairman of the board in 1946.

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Charles R. Preston

Charles R. Preston, 57, vice-president and director of Kansas Gas & Electric Co, died at his home in Wichita Feb 6 following a heart attack.

Preston began his utility career with

CHARLES R. PRESTON

Texas Power & Light Co in 1912 as a draftsman. He became resident engineer supervising construction work and later was given responsibility for inventory and appraisal of new properties being considered for purchase.

After World War I Preston joined Phoenix Utility Co as an engineering inspector. After two years as a consulting engineer for Moses, Pope & Trainer, New York engineering firm, he returned to the Phoenix company on Pennsylvania Power & Light Co operations. There he was responsible for general supervision of construction. In 1924 he was construction superintendent in Phoenix for the same company.

In 1925 Preston went to Florida Power & Light Co. His duties covered a variety of engineering and commercial work, including two years as general sales manager and two years as engineer in charge of company valuation and appraisal in electric rate cases.

Preston went to Kansas G&E in 1937 as a general utility engineer. He became assistant to the president in 1940, a director in 1942, and vice-president in 1947.

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John E. S. Thorpe

John E. S. Thorpe, president of Nantahala Power & Light Co, Franklin, N. C., and a director of the Aluminum Co of America's Badin Plant, died in Asheville, Feb 24.

A native of England, Thorpe came to this country in 1890. He started his career with J. G. White & Co in 1905 and was sent to San Juan, Puerto Rico, as assistant to the electrical engineer of the San Juan Light & Transit Co. Later he served as general superintendent and as consulting engineer in the main office in Toronto.

In 1913 Thorpe was elected chief engineer and managing director of Mexican Northern Power Co and took charge of construction of the hydro project on the Conchose River near Santa Rosalia. He joined Tallassee Power Co, an Alcoa subsidiary, in 1915 as resident engineer at Badin, N. C., in charge of construction of Narrows Dam and in 1918 was made general superintendent.

After an interval as vice-president of Charles B. Bawley & Co, Thorpe returned to Alcoa in 1926. He made engineering investigations for the High Rock hydro development on the Yadkin River and went to Russia with an engineering and geological party to investigate ore and water power properties. Later he became general superintendent of another Alcoa subsidiary, Knoxville Power Co, in charge of construction of Calderwood Dam. He was elected president of Nantahala in 1929.

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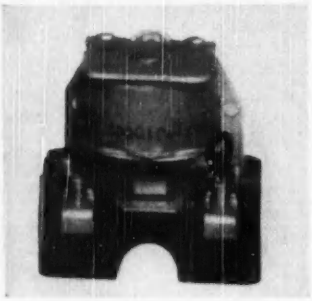
Paul L. G. Hasskarl, 62, chief safety engineer of Pennsylvania Power & Light Co, died Feb 22 in Allentown. He was a former general chairman of the Public Utilities Section of the National Safety Council.

NEW EQUIPMENT



Accelerating Relay

DESIGNED SPECIFICALLY for starting single-phase, capacitor-start, and capacitor-start capacitor-run motors is a voltage-type accelerating relay. It is said to be particularly applicable where an explosion-proof case is being used.

As the motor comes up to speed, the relay picks up when the induced voltage in the start winding has reached the proper value, thus taking the start winding out of the circuit at the desired speed. Voltage drop at motor terminals is said to be eliminated. A wide differential between pickup and drop-out voltage provides for variations in line voltage. Contact rating is 50 amp at 115 v and 30 amp at 230 v. In normal operation, the contact handles start-winding current only.

General Electric Co, Apparatus Dept, Schenectady 5, N. Y.

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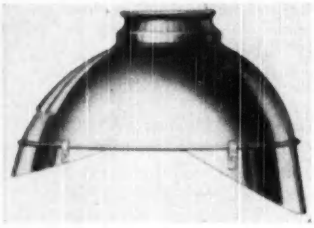

Reflector

Type II IES light pattern is provided by a stainless steel Directolite reflector of asymetric design. A line of collars is available for attachment to porcelain and metal heads in which correct focal position is said to be obtained with normal settings for 1,000 and 2,500 lm, $5\frac{3}{8}$ in. light center series lamps or $5\frac{1}{4}$ in. light center multiple lamps.

Line Material Co, Milwaukee 1, Wis.

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Electrical Tape

THE BACKING of Tuck No. 330 Vinelectric tape is a 0.006 thickness of the synthetic resin used on Type T synthetic insulated wire (Vinyl plastic) to combine the functions of rubber insulating tape and friction tape. Other advantages claimed for the tape include resistance to oils, acids and water, and good outdoor aging properties. Dielectric strength is reported at over 7,000 v, tensile strength at 20 lb per in. width, and adhesion at 25 oz per in. width.

Technical Tape Corp, W. 177 St, New York 53, N. Y.

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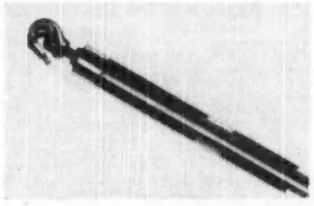

Rainshield Hot Stick

Greater safety to the lineman is said to be provided by a newly developed Rainshield Stick. The cut-away view shows the plastic shield installed on a Han-Pol. The shield forms a chamber sealed at the upper end, with an air gap at the lower end to break the flow of moisture down the stick. Rainshields are available on all standard hot sticks and for use with clampsticks or Fit-On poles, or may be obtained separately for mounting on $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$ and 3-in. poles.

James R. Kearney Corp, 4236 Clayton Ave, St. Louis 10, Mo.

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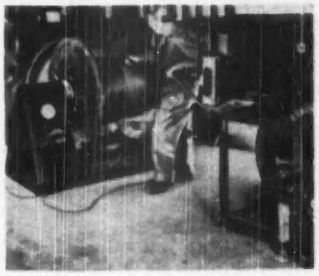
Cable Winding Machine

Accurately measured lengths of cable or messenger strand can reportedly be transferred from pay-out to take-up reel in a few minutes by a single operator. The Reel-O-Matic is equipped with two



110-v ac motors. A fingertip control lever is provided to raise and lower take-up reels on the motor-driven loading platform, while the driving arm is foot-pedal operated with interlock controls, four driving speeds, and a self-aligning driving pin designed to fit all makes of reels.

The steel welded frame construction is mounted on a 30x60 in. steel base. A steel shaft and four interchangeable locking collars are included as standard equipment to hold take-up reels up to 48 in. diam and 36 in. wide.

Marion Electric Co, 21650 Wyoming, Detroit 20, Mich.

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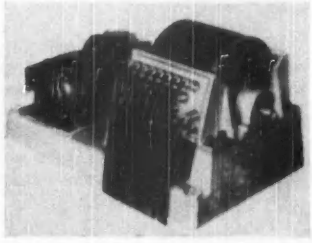


Data Storage System

ROTATING MAGNETIC drums are utilized in a magnetic data storage system that can be used in computing, inventory, and automatic control systems. Storage capacity as high as 1,280 magnetic marks per sq in. may be attained, and 120,000 groups of marks per second may be read from the drum. Information may be loaded into the system at a rate of 500 groups per second. Permanence of the record is reportedly assured even during a momentary power or equipment failure.

Engineering Research Associates, Inc, 1902 W. Minnehaha Ave, St. Paul, Minn.

ELECTRICAL BUSINESS OUTLOOK

Industry is not likely to grant large wage increases in 1950. The cost of living—main issue behind the postwar rounds of wage increases—has been dropping for over a year (chart). And this takes the pressure off business. Some prosperous companies will raise pay. Many will add to pension benefits. But wages, on the average, will go up only slightly.

The trend of wages has always been influenced by three principal factors: (1) the recent trend of living costs, (2) output per worker, (3) the number of workers looking for jobs. Now living costs show a downtrend. Unemployment is rising. Few companies will cut wages for these reasons. But they are likely to hold wages steady except where output per worker is up sharply.

The drop in living costs during 1949 makes this year's wage outlook different from last. Then there was still talk about higher prices. Now this strong argument for pay increases is gone. The cost of living is expected to keep on declining throughout 1950.

Utility workers, for example, are way ahead of the cost of living, thanks to 1949 wage boosts. Increases that were granted by the power companies ranged from 6 to 8%, raising the average industry hourly rate 5%. The cost of living fell 1.5% over the year. Workers in many other lines got no increases. So utility wages have improved compared with those paid by other industries.

Consumer prices are not expected to skid far in the coming year. But the slow downward trend should continue. And there seems to be almost no chance that the retail price level will rise.

Here's what will probably happen to the cost-of-living items:

Food prices will decline 2 or 3% unless bad weather spoils the 1950 harvest. Meat prices, in particular, will go down, as more pork and beef are coming to market soon.

Clothing will be cheaper too. Both men's and women's wear will sell for less this summer, although the cuts won't be as big as last year.

Home furnishings are still going lower, on the average. Furniture prices may rise. But this should be offset by further cuts on small wares and some electric appliances.

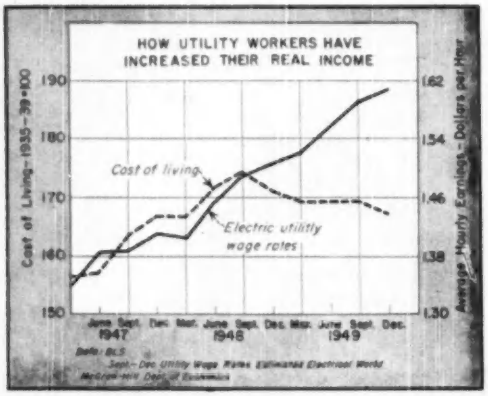
Rent is the only item slated to go up. The national average gets boosted as more units are decontrolled. But don't be fooled by the Bureau of Labor Statistics' rent index. It has understated rent all along. Now it will overstate the rise.

BLS cost-of-living index (chart) may drop only 2 or 3 points because of this rent factor, from about 167 now to about 164 by the year-end. The actual drop in living costs will be a little more.

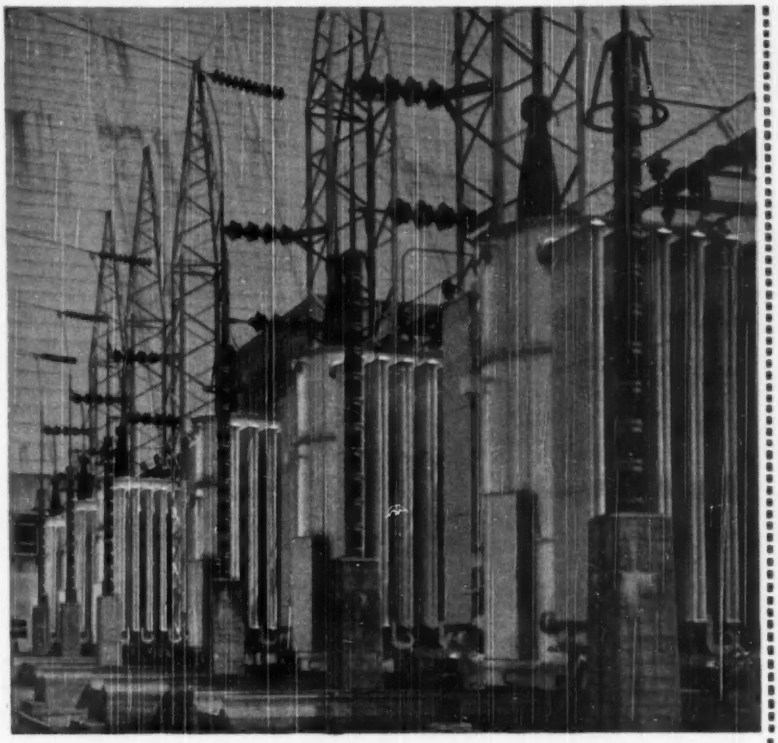
What will unions stress if cost of living is no longer an issue? Almost surely they will stress ability to pay in industries where favorable markets or improved technology have boosted sales and profits. Utilities are in this group. They sold 8 billion kwhr more in 1949 than in 1948. And the power company profits totalled 15% higher.

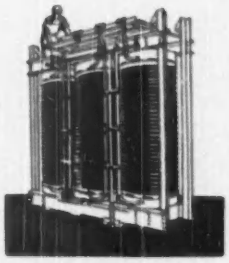
Best answer to this is that 1949 utility profits increased little more than rate loss. Income was still only about 5.25% of the average investment in plant and equipment. And this return on investment was none too much, considering the high yields demanded by investors in utility securities. Only a high return on investment can keep the utility construction program going. And this expansion is the key to more and better jobs in the power industry.

Meanwhile the labor market is getting easier. There will probably be more applicants for utility jobs in 1950. And this is not conducive to pay raises.

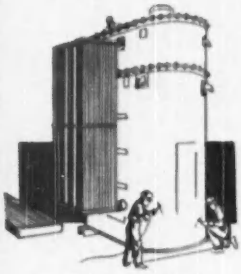


IN 1947 and 1948 utility wages closely followed the trend of living costs. But in the late months of 1948, the cost of living began a slow decline which is still continuing. Consequently, pay increases won by utility workers in 1949 provided bigger and bigger gains in real income. The declining trend of living costs removes one of the strongest arguments for further wage boosts

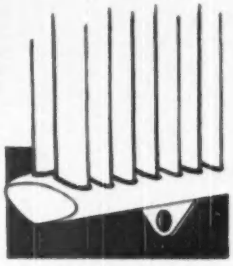




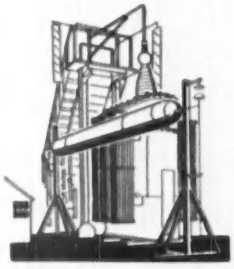
Core and Coil Construction



Tank Construction



Radiator Construction



Transformer Testing

MOLONEY FEATURES SAVE YOU MONEY!

The features that are built into every Moloney Power Transformer are the result of years of exhaustive study and research. Research that is based on records of results actually obtained . . . on more efficient operating performance and lower maintenance costs.

Take, for instance, Core and Coil Construction. Core type construction is used, providing a maximum amount of winding surface exposed to the oil to assure efficient dissipation of heat. To insure the greatest possible protection against distortion under the most severe operating conditions, windings are rigidly braced.

Tanks are made of high grade steel, electrically welded, with Z bars or box-type reinforcements . . . Radiators are of all-welded construction with tubes spaced in a double row for easy cleaning and painting. There is no "hard-to-get-at" center row. All welds are external. Headers are designed so that water cannot collect and cause rust.

These and other features, all tested to meet the most rigid specifications for "on-the-job" performance, have been developed and improved in more than half a century of exclusive transformer manufacturing and are your assurance of *savings in dollars* . . . when you use Moloney Power Transformers.

Illustration above shows a Moloney Power Transformer installation: 168,000 Kva of installed capacity, transforming 13,800 to 161,000 volts.

. . . OVER 50 YEARS OF LEADERSHIP IN DESIGN, RESEARCH, ENGINEERING

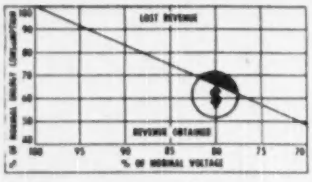
MOLONEY ELECTRIC CO. ☆ ST. LOUIS 20, MO.

POWER AND DISTRIBUTION TRANSFORMERS EXCLUSIVELY SINCE 1894

Increase Revenue by Correcting Rural Voltage

ALLIS-CHALMERS 5/8% STEP VOLTAGE REGULATOR

Look at the Extra Revenue You Get



THE CHART SHOWS the energy consumption for incandescent lamps at varying voltages . . . illustrates the increase in revenue you can get by providing correct voltage at all times.

But boosting voltage is just one part of the job of correcting the rural low voltage problem.

For the first time, a small, economical unit for *regulating* (not just boosting) rural voltage is available.

Allis-Chalmers new pole type voltage regulator is a fully automatic 5/8% step unit . . . has a 20% range of regulation and holds ± 1 volt band. Rating is 10.8 kva, 15 amp, 7200 v, ± 10% regulation. Three years of field tests have proved its reliability.

In addition, easy maintenance—easy mounting—simple control are provided . . . *Contact life is long.* Quick-break mechanism minimizes arcing and pitting. Small 5/8% steps mean contacts interrupt smaller kva—last longer. Unit is mounted on pole as easily as distribution transformer . . . *Control* requires just two simple knob adjustments to set.

Ask an A-C engineer to determine the best means of improving voltage conditions on your rural system using voltage regulators. Contact a nearby A-C district office or send in the coupon.

ALLIS-CHALMERS

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☐ Send me descriptive bulletin 6424, plus "When and Where to Apply Rural Voltage Regulators" bulletin 6409.

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